PRACTICE EXAM 6: RED SEAL CARPENTER INTERPROVINCIAL SIMULATION (100 QUESTIONS)

1. A carpenter is selecting a saw to cut a compound mitre on a piece of crown moulding where both a mitre angle and a bevel angle are needed simultaneously. Which saw can perform both cuts in a single pass?

A. A standard mitre saw that rotates for mitre cuts but has a fixed vertical blade that cannot tilt

B. A sliding compound mitre saw that rotates on a turntable for mitre cuts and tilts the blade for bevel cuts

C. A table saw with the blade tilted and the mitre gauge set to the desired angle simultaneously

D. A portable circular saw with an adjustable bevel plate and a ripping guide for straight compound cuts

2. A carpenter is preparing to use a powder-actuated fastening tool (Ramset) to attach a wood sill plate to a concrete floor. Before using this tool, what specific requirement must the carpenter meet?

A. The carpenter must hold a valid blasting licence issued by the provincial regulatory authority

B. The carpenter must be accompanied by a supervisor at all times while the tool is in active use

C. The carpenter must submit a written risk assessment to the site safety officer 48 hours before use

D. The carpenter must have received specific training and certification on the powder-actuated tool model

3. A carpenter is working on a job site where a coworker collapses and appears to be unconscious. The site first aid attendant is not immediately available. What should the carpenter do first?

A. Call for emergency medical services immediately and begin providing first aid within the carpenter's level of training

B. Move the coworker to a shaded area and wait for the first aid attendant to return from their break

C. Search the coworker's pockets for medical identification before taking any further action on site

D. Resume working and notify the supervisor at the end of the shift about the incident for documentation

4. A carpenter is selecting respiratory protection for a task that involves cutting pressure-treated lumber with a circular saw outdoors. The treated lumber contains copper-based preservatives. What is the minimum respiratory protection required?

A. No respiratory protection is required when cutting treated lumber outdoors where natural ventilation exists

B. A surgical-style paper mask that filters large dust particles generated by the saw cutting operation

C. An N95 disposable particulate respirator that filters at least 95% of airborne particles including wood dust

D. A full-face supplied-air respirator with a continuous positive-pressure air supply from a remote source

5. A carpenter is working on a roof with a slope of 6/12. The contractor has decided that no fall protection is necessary because "the slope isn't steep enough to warrant it." At what point does Canadian OHS legislation require fall protection, regardless of the roof slope?

A. When the worker is exposed to a fall of 3 metres or more, regardless of the slope of the working surface

B. When the roof slope exceeds 4/12 and the worker is more than 1.5 metres above the ground surface

C. When the worker is more than 6 metres above grade, which is the standard threshold for all roof work

D. Fall protection is only required on flat roofs where there is no slope to prevent the worker from sliding

6. A scaffold inspector finds that workers have stacked loose concrete blocks under the base plates of one scaffold leg to compensate for a low spot in the ground. Why is this practice prohibited?

A. Concrete blocks add too much weight to the scaffold base and exceed the ground bearing capacity

B. Concrete blocks are porous and absorb moisture, which freezes in winter and causes the blocks to crack

C. Concrete blocks change the colour-coding system used to identify scaffold load ratings on the job site

D. Concrete blocks can crack, shift, or crush under load, causing sudden settlement and potential scaffold collapse

7. A carpenter is required to use a full body harness as part of a fall arrest system. When donning the harness, where is the dorsal D-ring located, and why is it the primary attachment point for fall arrest?

A. On the front chest strap, because it allows the worker to see the lanyard connection at all times

B. On the hip belt, because it provides the lowest attachment point and minimizes free-fall distance

C. Between the shoulder blades on the back, because it positions the arrest force at the body's centre of mass to keep the worker upright during a fall

D. On the left shoulder strap, because it keeps the lanyard away from the worker's dominant hand

8. A carpenter is operating a boom lift and has extended the boom to reach a work area on the second storey of a building. A strong gust of wind causes the platform to sway noticeably. What should the carpenter do?

A. Lower the boom immediately and discontinue work until wind conditions are assessed and determined to be safe

B. Continue working but hold onto the platform guardrail with one hand while working with the other

C. Extend the outriggers further to increase the stability of the machine against the wind loading forces

D. Move the boom lift closer to the building so the building acts as a windbreak for the platform area

9. A carpenter needs to lift a steel beam into position on top of a wall using a crane. The beam weighs 450 kg. The carpenter has two chain slings, each rated at 500 kg in a vertical hitch. The carpenter plans to use a two-leg bridle hitch with both slings at 45-degree angles from horizontal. Is this rigging plan adequate?

A. Yes, because each sling is rated above the total beam weight and two slings provide double the capacity

B. No, because at a 45-degree angle each sling leg carries approximately 318 kg, but the reduced basket capacity factor means each sling's effective rating is only about 354 kg, leaving inadequate margin

C. Yes, because chain slings do not lose capacity at angles due to their rigid link construction

D. No, because chain slings cannot be used in a bridle hitch configuration on structural steel members

10. A carpenter discovers a defective extension ladder during a pre-use inspection — one of the rung locks does not engage properly, allowing the fly section to slide unexpectedly. What is the correct action?

A. Tie the fly section to the base section with rope at the desired height to prevent it from sliding down

B. Use the ladder only at its fully collapsed length so the defective rung lock is not needed for the work

C. Operate the ladder with two workers — one at the base holding the fly section while the other climbs

D. Tag the ladder as defective, remove it from service, and report it to the supervisor for repair or disposal

11. A construction site has an emergency assembly point designated on the site safety plan. When should workers report to this assembly point?

A. Only during a scheduled fire drill conducted by the site safety officer on a predetermined monthly date

B. Only when personally instructed by the superintendent to evacuate through a direct verbal command

C. Whenever the site evacuation alarm sounds or whenever an emergency evacuation is ordered by any authorized person

D. Only after completing their current task to avoid leaving partially finished work that could create hazards

12. A carpenter is using a pneumatic roofing nailer to install asphalt shingles. The nailer is rated for specific fastener lengths and types. The carpenter runs out of the specified roofing nails and considers loading common framing nails of the same length. Why is this substitution dangerous?

A. Framing nails have a different head diameter and shank type than roofing nails and may not drive or hold properly, and they can damage the nailer's internal mechanism

B. Framing nails are more expensive than roofing nails and using them wastes material budget allocation

C. Framing nails are shorter than roofing nails and will not penetrate the full thickness of the shingle

D. Framing nails have a brighter finish that reflects sunlight and creates a glare hazard on the roof surface

13. A floor plan for a commercial building uses a grid system with letters along one axis (A, B, C, D) and numbers along the other axis (1, 2, 3, 4). A column is identified on the plan as being at intersection "C-3." What is the purpose of this grid system?

A. It assigns cost codes to each column for the estimator's material tracking and budget allocation

B. It identifies the structural capacity of each column using a letter-number rating classification

C. It designates the sequence in which the columns must be poured during the concrete placement phase

D. It establishes a coordinate reference system that allows every element in the building to be located precisely on the drawings and on site

14. A carpenter is reading a door schedule on a set of construction drawings. The schedule lists each door by a number and specifies the door size, type, material, fire rating, hardware set, and frame type. What is the purpose of a door schedule?

A. It tracks the installation progress of each door during construction for the project manager's reports

B. It provides a centralized reference that lists all door specifications in one location so each door is ordered and installed correctly

C. It establishes the sequence in which doors must be installed during the finishing phase of construction

D. It identifies which carpenter is assigned to install each door based on their skill level and availability

15. A carpenter needs to determine the slope of a drainage ditch that runs from point A (elevation 101.500 m) to point B (elevation 100.800 m) over a horizontal distance of 35 metres. What is the slope expressed as a percentage?

A. 1.0% based on dividing the elevation difference by the horizontal distance and rounding down

B. 3.5% based on dividing the horizontal distance by the elevation difference for an inverted slope

C. 2.0% based on dividing the elevation difference of 0.700 m by the horizontal distance of 35 m

D. 0.7% based on using the elevation difference directly as the percentage without calculation

16. A carpenter is checking a builder's level for calibration using the two-peg test. The instrument passes the test with an error of less than 3 mm at 30 metres. How often should a builder's level typically be calibrated?

A. At least annually and any time the instrument has been dropped, struck, or subjected to a significant impact

B. Only when the instrument visibly shows damage such as a cracked lens or bent levelling screw

C. Every five years to match the replacement schedule for the instrument's internal battery and optics

D. Before and after each day of use by performing a full two-peg test at the start and end of every shift

17. A site plan shows the building footprint with the corners labelled A, B, C, and D. Corner A is the primary reference point, and all building dimensions originate from this corner. The surveyor has set an iron pin at corner A. What is this reference point called in construction layout terminology?

A. The benchmark, which establishes the vertical reference for all elevation measurements on the project

B. The setback point, which defines the minimum distance between the building and the property line

C. The centreline, which divides the building into two equal halves for symmetrical layout on the site

D. The point of beginning, which is the primary horizontal reference from which all building layout dimensions are measured

18. When reading the National Building Code of Canada Part 9, a carpenter looks up the maximum span for a 38 × 235 mm (2 × 10) floor joist at 400 mm on centre. The table specifies the span based on lumber species and grade. Why does the span vary by species and grade?

A. Different species have different colours that affect their visual appearance when used as exposed joists

B. Different species and grades have different allowable bending stresses and stiffness values that determine how far they can safely span

C. Different species and grades are available in different lengths that physically limit the maximum span

D. Different species and grades have different fire resistance ratings that affect the Building Code span allowance

19. A carpenter is using a story pole to mark the coursing heights for brick veneer on the exterior of a building. What is a story pole?

A. A telescoping measuring device that extends from the foundation to the roof to measure total wall height

B. A level used to verify that each course of brick is horizontal before proceeding to the next course

C. A straight board with markings at each course height that is used to transfer consistent course spacing to the wall surface

D. A reference post driven into the ground at each corner of the building to verify the plumb of the walls

20. A carpenter is estimating materials for a roof and needs to convert the total roof area from square metres to roofing squares. One roofing square equals 100 square feet or approximately 9.29 square metres. If the total roof area is 195 square metres, approximately how many squares does the carpenter need?

A. 19.5 squares based on dividing the roof area by 10 as an approximation for the metric conversion

B. 1,950 squares based on multiplying the roof area by 10 for the conversion from metres to squares

C. 195 squares based on using the roof area directly in square metres as the number of roofing squares

D. 21 squares based on dividing the total roof area of 195 m^2 by 9.29 m^2 per square and rounding up

21. A carpenter needs to find the centre of a rectangular room for layout purposes. The room measures 5.4 m × 7.2 m. What are the coordinates of the centre point measured from one corner?

A. 2.7 m from the short wall and 3.6 m from the long wall, found by dividing each dimension in half

B. 5.4 m from the short wall and 7.2 m from the long wall, found by using the full dimensions as reference

C. 1.35 m from the short wall and 1.8 m from the long wall, found by dividing each dimension by four

D. 3.6 m from the short wall and 5.4 m from the long wall, matching the wrong dimension to each wall

22. A carpenter is calculating the number of sheets of 1220 × 2440 mm (4 × 8 foot) plywood needed for roof sheathing. The roof has two rectangular planes, each measuring 12.0 m long and 5.0 m on the slope. What is the total number of sheets required before waste allowance?

A. 20 sheets based on dividing the total roof area by 4 square metres per sheet as an approximation

B. 30 sheets based on dividing only one roof plane by the panel area and rounding to the nearest ten

C. 40 sheets based on dividing the total roof area of 120 m² by the panel area of 2.977 m² and rounding up

D. 60 sheets based on doubling the panel count for both roof planes and adding a 50% waste factor

23. When a carpenter uses a chalk line to snap a layout line on a subfloor, the chalk is available in several colours. On a busy job site with multiple chalk lines for different purposes, why do carpenters use different chalk colours?

A. Different chalk colours indicate which carpenter snapped the line for accountability and quality control

B. Different colours fade at different rates and are selected based on how long the line needs to remain visible

C. Different colours are required by the Building Code for different types of layout lines on the subfloor

D. Different colours distinguish between different layout purposes — for example, blue for wall lines, red for plumbing, orange for electrical — to prevent confusion

24. A carpenter is establishing the height of the concrete foundation forms using a rotary laser level. The laser projects a horizontal plane at a height of 1.85 m above the benchmark. The benchmark elevation is 100.000 m. What is the elevation of the laser plane?

A. 98.150 m based on subtracting the laser height from the benchmark elevation for a below-grade value

B. 101.850 m based on adding the laser height of 1.85 m to the benchmark elevation of 100.000 m

C. 100.185 m based on adding only a decimal fraction of the laser height to the benchmark elevation

D. 1.850 m based on using only the laser height without reference to the benchmark elevation value

25. A carpenter is laying out anchor bolt locations along a foundation wall and must ensure that no bolt falls directly beneath a stud location. Why must anchor bolts be offset from stud positions?

A. Bolts beneath studs would require notching the bottom plate, which weakens the plate at the bearing point

B. Bolts beneath studs interfere with the carpenter's ability to nail through the bottom plate into the stud end

C. Bolts beneath studs create a fire pathway through the bottom plate that violates the fire stopping requirements

D. Bolts beneath studs cannot be tightened because the stud blocks wrench access to the nut and washer from above

26. A carpenter is reading a specification that requires "dimensional lumber conforming to CSA O141." What does this specification standard govern?

A. The grading rules for softwood lumber, including species identification, grade stamps, moisture content, and allowable defects

B. The fire resistance rating of lumber used in fire-rated wall assemblies and floor-ceiling separations

C. The chemical treatment requirements for lumber used in contact with concrete and ground applications

D. The fastener spacing requirements for attaching lumber in structural framing and sheathing applications

27. A carpenter is constructing formwork for a circular concrete column with a diameter of 450 mm. What forming method is most commonly used for round columns of this size?

A. Site-built square forms with the corners chamfered to approximate a circular cross-section shape

B. A manufactured fibre tube form (sonotube) that is a single-use cardboard tube cut to the column height

C. Flexible sheet metal wrapped around a circular rebar cage and clamped to maintain the round shape

D. Stacked concrete masonry units used as permanent forms that remain in place after the pour is completed

28. A carpenter is placing rebar in a footing and must create a 90-degree bend in a 15M bar to form a dowel that extends vertically from the footing into the wall above. What is the minimum bend radius for standard rebar bending?

A. The bar can be bent at a sharp 90-degree angle with no minimum radius as long as the bend is clean

B. The minimum radius is equal to the bar diameter, allowing a tight bend with minimal material deformation

C. The minimum radius equals ten times the bar diameter to prevent cracking and weakening of the steel

D. The minimum inside bend radius is typically six times the bar diameter for standard grade rebar to prevent fracturing the steel at the bend

29. A carpenter builds footing forms for a building on a site where the soil investigation report indicates a bearing capacity of 75 kPa (1,500 psf). The structural drawings show a strip footing that is 600 mm wide. The building inspector asks the carpenter whether the footing excavation has reached undisturbed native soil. Why is bearing on undisturbed native soil important?

A. Undisturbed native soil has the bearing capacity indicated in the soil report, while fill or disturbed soil may have significantly lower and unpredictable capacity that cannot support the design loads

B. Undisturbed soil has a consistent colour and texture that makes it easier for the inspector to verify depth

C. Undisturbed soil is always dry, while disturbed soil contains moisture that weakens the concrete bond

D. Undisturbed soil is required by the environmental regulations to preserve the site's natural ecosystem

30. A carpenter is building wall forms for a basement wall that will have a window buck (a framed box that creates the window opening in the concrete wall). The buck is set at the correct location and height within the form. What must the carpenter do to prevent the window buck from floating upward when concrete is placed around it?

A. Fill the buck with heavy materials such as concrete blocks before the pour to weigh it down in position

B. Nail the buck to the form panels on the interior side only so it is anchored during the concrete placement

C. Brace the buck securely to the form panels on both sides and to the reinforcing steel to resist the buoyancy force of the wet concrete

D. Pour the concrete slowly so the rising level gives the buck time to absorb water and become heavy

31. A carpenter is constructing a slab-on-grade for a heated workshop. The specification calls for in-floor radiant heating tubes to be embedded in the concrete slab. The tubes must be positioned at a specific depth within the slab. What must the carpenter ensure about the tubing before the pour?

A. The tubes must be filled with water during the pour to prevent them from collapsing under concrete pressure

B. The tubes must be secured to the reinforcement mesh or chairs at the specified height and pressure-tested before concrete is placed to verify they have no leaks

C. The tubes must be left empty and sealed at both ends so they can be connected to the heating system later

D. The tubes must be wrapped in insulation before the pour to prevent the concrete from bonding to them

32. When stripping formwork from a concrete wall, the carpenter notices that a section of the concrete surface has a pattern of small, circular holes approximately 3 to 6 mm in diameter covering an area of about one square metre. These holes are called bug holes. What causes bug holes in concrete?

A. Insects burrowing into the wet concrete surface before it has hardened and setting during the cure

B. Chemical reaction between the form release agent and the concrete surface that dissolves small areas

C. Rapid temperature changes during curing that cause differential shrinkage and surface pitting across the wall

D. Small air bubbles trapped against the form surface that were not expelled by vibration during consolidation

33. A carpenter is preparing to pour a concrete retaining wall. The structural engineer has specified that the wall must have vertical control joints at 6-metre intervals to control cracking. How are control joints formed in a concrete wall?

A. By inserting premoulded joint strips or installing a formed groove on the interior face of the wall at the specified intervals to create a weakened plane where cracking is directed

B. By stopping the concrete pour at each joint location and resuming the next day for a natural cold joint

C. By cutting a groove with a concrete saw through the full thickness of the wall after the forms are stripped

D. By installing a full-depth metal expansion joint plate that divides the wall into independent structural segments

34. A carpenter discovers during form inspection that a snap tie has been installed with the wedge driven at a steep angle rather than the recommended slight angle. What problem can a steeply angled wedge cause?

A. The steep angle drives the wedge deeper, over-tightening the tie and pulling the form panels inward

B. The steep angle makes the wedge harder to remove during stripping because it binds in the bracket slot

C. The steep angle reduces the wedge's bearing contact on the tie bracket, allowing the wedge to slip under pressure and potentially lose the tie connection during the pour

D. The steep angle splits the waler at the wedge location because the concentrated force cracks the wood grain

35. When placing concrete in a tall wall form, the carpenter monitors the rate of pour — the vertical rise of the concrete level per hour. Why must the rate of pour be controlled and not exceed the form's design rate?

A. A faster pour rate generates more heat of hydration that can thermally shock the form panels and warp them

B. A faster pour rate increases the lateral pressure on the forms beyond their design capacity, risking blowout

C. A faster pour rate causes the concrete to cure unevenly from top to bottom, creating strength variations

D. A faster pour rate prevents the vibrator from keeping pace, requiring more vibrator insertions per lift

36. A carpenter is constructing formwork for a concrete beam that will carry a second-floor slab. The beam is 300 mm wide and 600 mm deep, spanning 6 metres between columns. The beam soffit (bottom panel) must support the full weight of the wet concrete. How is the weight of wet concrete typically estimated for formwork design?

A. At approximately 12 kN/m³, which is the density of lightweight aggregate concrete used in beam construction

B. At approximately 18 kN/m³, which is the average density of dry, cured concrete without reinforcing steel

C. At approximately 20 kN/m³, which represents the density of concrete with a moderate air entrainment ratio

D. At approximately 23.5 kN/m³ (approximately 150 pounds per cubic foot), which is the standard density of normal-weight fresh concrete

37. A carpenter pours concrete for a footing in late afternoon. The overnight temperature is forecast to be 8°C. The concrete specification requires a minimum curing temperature of 10°C for the first 72 hours. What should the carpenter do?

A. Apply insulating blankets over the freshly placed concrete to retain the heat of hydration and maintain the minimum curing temperature above 10°C overnight

B. Pour additional water on the concrete surface before covering it to provide moisture for curing overnight

C. Leave the concrete exposed because 8°C is close enough to 10°C and will not significantly affect strength gain

D. Strip the footing forms immediately so the concrete can dry faster and gain strength before the cold night

38. A carpenter is grouting beneath a steel base plate that supports a structural column. The base plate sits on levelling shims approximately 25 mm above the concrete foundation. Non-shrink grout is pumped or poured into the space beneath the plate. Why must the grout be non-shrink?

A. Non-shrink grout is lighter than standard grout and reduces the total dead load on the foundation below

B. Non-shrink grout has a faster setting time that allows the shims to be removed within minutes of placement

C. Non-shrink grout ensures full-contact bearing between the base plate and the foundation, maintaining even load distribution as the grout cures without developing gaps

D. Non-shrink grout is more fluid than standard grout and requires less pressure to fill the space under the plate

39. A carpenter is building forms for a concrete stair landing that is elevated above the ground floor. The landing is a suspended slab that must be supported by shores from below during the pour. How long must the shores remain in place beneath the landing?

A. Until the concrete reaches 50% of its 28-day design strength, typically 3 to 5 days in warm conditions

B. Until the concrete reaches 70–75% of its 28-day design strength, which may require 7 to 14 days depending on conditions

C. Until 24 hours have passed since the concrete was placed, regardless of the ambient temperature

D. Until the building inspector completes the framing inspection and approves the removal of the shores

40. A carpenter has completed a concrete pour for a residential garage floor. The slab is 100 mm thick on a compacted granular base with a vapour barrier. The specification calls for isolation joints where the slab meets the garage walls. The carpenter forgot to install the isolation joint material before the pour. Can isolation joints be installed after the concrete has cured?

A. Yes, but the joint must be cut with a concrete saw after curing and filled with a compressible joint filler to separate the slab from the wall

B. No, isolation joints can only be installed before the pour using premoulded joint filler placed against the wall

C. Yes, by drilling holes along the slab-to-wall junction and inserting flexible dowels that allow movement

D. No, the slab must be removed and re-poured with the proper isolation joints placed before concrete placement

41. A carpenter is placing concrete for a footing in a trench that has standing water at the bottom from recent rainfall. The water is approximately 50 mm deep. What must be done before concrete can be placed?

A. Add extra cement to the concrete mix to compensate for the water that will dilute the mix at the bottom

B. Place gravel in the trench to cover the water and provide a dry surface for the concrete placement

C. Remove the standing water by pumping or bailing before placing concrete to prevent dilution and weakening of the mix at the bottom of the footing

D. Pour the concrete directly into the standing water because the concrete's weight will displace the water

42. A carpenter is finishing a large concrete slab and notices that one section of the slab has already begun to stiffen while the adjacent section is still plastic and workable. What is the most likely cause of this inconsistent setting?

A. The reinforcing mesh in the stiffening section is absorbing heat and accelerating the cure in that area

B. The concrete in the stiffening section was placed from an earlier truck load that has been hydrating longer than the concrete from a later delivery

C. The granular base beneath the stiffening section is drier and is absorbing moisture from the concrete faster

D. The form release agent on the edge forms near the stiffening section is reacting with the concrete and accelerating the set

43. A carpenter is installing floor joists in a building where the main beam runs through the centre of the building. The joists from one side lap over the joists from the other side on top of the beam. The lapped joists must be fastened together where they overlap. What is the minimum fastening requirement at this lap?

A. A minimum of three nails driven through both joists at the lap, or as specified by the Building Code, to transfer loads between the lapped members

B. A single bolt through both joists with washers on each side for a rigid connection at the beam

C. A metal strap wrapped around both joists and nailed to each one for a positive lateral connection

D. Construction adhesive applied between the overlapping faces with no mechanical fasteners required

44. A carpenter is framing a wall and must install backing for a future wall-mounted television bracket. The television weighs 35 kg and will be mounted at a height of 1,500 mm above the floor. What type of backing should the carpenter install?

A. An extra layer of drywall behind the mounting location for increased screw-holding capacity

B. A small piece of plywood attached to the drywall surface at the mounting location after the wall is finished

C. Solid blocking between the studs at the mounting height — a horizontal piece of 38 × 140 mm or 38 × 184 mm lumber nailed between the studs

D. A steel mounting plate embedded in the drywall at the specified height for direct bracket attachment

45. A floor system using dimensional lumber joists has been framed, and the carpenter notices that two adjacent joists have excessive crown — they bow upward noticeably more than the surrounding joists. The subfloor installed over these joists creates a visible hump in the floor. What is the best corrective action?

A. Add weight to the humped area during construction to force the crowned joists down to level over time

B. Plane or trim the top edges of the excessively crowned joists until they are flush with the adjacent joists before installing the subfloor

C. Install additional blocking between the crowned joists and their neighbours to transfer loads and level them

D. Remove the subfloor panel over the hump and reinstall it with extra adhesive to pull the panel down flat

46. A carpenter is building a load-bearing wall that contains a plumbing stack vent that passes vertically through the wall from the floor below to the attic above. The wall is framed with 38 × 140 mm (2 × 6) studs. The vent pipe has a diameter of 75 mm. The carpenter needs to drill holes through the wall plates and blocking to accommodate the pipe. What is the maximum allowable hole diameter in a load-bearing wall stud according to the Building Code?

A. 25% of the stud width, which would be approximately 35 mm — too small for the 75 mm pipe

B. 50% of the stud width, which would be approximately 70 mm — still slightly too small for the pipe

C. Any size hole is acceptable as long as the stud is doubled on each side of the penetration

D. 40% of the stud depth, which would be approximately 56 mm for a 2×6 stud, requiring the pipe to pass through the plates and blocking rather than through the studs themselves

47. When framing an exterior wall, the carpenter must install cripple studs above the header over a window opening. These cripple studs must maintain the regular stud spacing module. One of the cripple stud positions falls directly above the midpoint of the header. Why is this cripple stud still necessary even though it does not support anything above except the top plate?

A. The cripple stud provides a nailing surface for the wall sheathing and drywall at the regular module spacing so panel edges always land on framing

B. The cripple stud transfers concentrated roof loads through the header to the trimmer studs below

C. The cripple stud acts as fire blocking in the space between the header and the top plate of the wall

D. The cripple stud prevents the top plate from deflecting downward between the king studs under load

48. A carpenter is installing engineered floor trusses and discovers that one truss has a metal connector plate that has partially separated from the wood at a bottom chord joint. The plate teeth are visible and the gap is approximately 3 mm. Should the carpenter install this truss?

A. Yes, because connector plate separation up to 5 mm is within the manufacturing tolerance for floor trusses

B. Yes, if the carpenter hammers the plate back into the wood before installation to re-establish the connection

C. No — a separated connector plate is a structural deficiency that compromises the joint's load capacity, and the truss must be rejected

D. No, but only if the separation is at a top chord joint — bottom chord separations do not affect structural capacity

49. A carpenter is constructing a deck and must determine the maximum allowable span for the deck joists. The joists are 38 × 184 mm (2 × 8) pressure-treated SPF at 400 mm on centre. Where does the carpenter find the maximum span for this application?

A. On the lumber grade stamp printed on each joist, which lists the maximum span for all applications

B. In the Building Code span tables or the Canadian Wood Council's span calculator, using the species, grade, size, spacing, and load conditions

C. From the pressure-treatment manufacturer's technical bulletin, which specifies spans for treated lumber

D. By measuring the distance between existing deck joists on a neighbouring property for reference

50. A roof has a 4/12 pitch and a total span of 9.6 metres. The carpenter must calculate the ridge height above the wall plate to determine the length of a temporary support post for the ridge board during installation. What is the ridge height?

A. 4.8 metres based on using the full span instead of half the span in the rise calculation formula

B. 2.4 metres based on multiplying the run by the pitch fraction of four to twelve and doubling for both sides

C. 0.8 metres based on dividing the total span by the pitch denominator of twelve directly without calculation

D. 1.6 metres based on multiplying the run of 4.8 metres by the pitch fraction of four to twelve

51. A carpenter is framing a wall and encounters a situation where a plumbing pipe must pass horizontally through two consecutive wall studs. The pipe diameter requires a notch in the front face of each stud. The Building Code limits notch depth in load-bearing studs. What is the general maximum notch depth allowed in a load-bearing stud?

A. One-quarter of the stud depth for notches in the outer third of the stud length, with the notch protected by a steel plate

B. One-half of the stud depth at any location along the stud length without any reinforcing protection

C. Two-thirds of the stud depth as long as the notch is within the middle third of the stud height

D. Notching is completely prohibited in load-bearing studs and the pipe must be rerouted around the wall

52. A carpenter is installing a glulam beam (glue-laminated timber) as a ridge beam in a cathedral ceiling. The beam is 130 mm wide and 456 mm deep. When handling and installing glulam, which orientation is critical?

A. The beam must be installed with the factory-stamped "TOP" mark facing upward, because glulam is engineered with higher-grade laminations on the tension side

B. The beam can be installed in any orientation because glulam is uniform throughout its cross-section

C. The beam must be installed with the factory-stamped "TOP" mark facing upward, because the lamination layup is engineered with specific grades positioned for the intended loading direction

D. The beam must be installed with the widest lamination facing down for maximum bearing on the support posts

53. A carpenter is building a conventional hip roof and needs to calculate the length of the hip rafter. The common rafter run is 4.0 metres and the roof pitch is 8/12. The unit line length for a hip rafter at 8/12 pitch is 18.76 inches per foot of common rafter run. The common rafter run in feet is approximately 13.12 feet. What is the approximate hip rafter line length?

A. 13.12 feet based on using only the common rafter run without applying the hip unit line length factor

B. 52.48 feet based on multiplying the run by the hip unit line length without dividing by twelve at the end

C. 8.0 feet based on multiplying the run by the pitch fraction of eight to twelve for the hip rafter length

D. 20.5 feet based on multiplying 13.12 feet by 18.76 and dividing by 12 to convert inches to feet

54. A carpenter has framed all walls on a building and is installing the double top plate. At a corner where two exterior walls meet, the double top plate of one wall extends past the end of the wall and laps over the top plate of the adjoining wall. Why must the double top plate lap at corners?

A. The lap creates a structural tie between the two walls, locking them together and preventing the corner from separating under lateral loads

B. The lap provides additional material for nailing the corner trim boards on the exterior of the building

C. The lap increases the fire resistance at the corner by adding an extra layer of wood at the junction

D. The lap creates a stepped surface that makes it easier to align the ceiling joists at the corner framing

55. A carpenter is installing diagonal wind bracing on a tall wall that will receive rigid foam insulation on the exterior instead of structural sheathing. The brace must be made of metal strapping. At what angle should the metal strap brace be installed for maximum racking resistance?

A. 30 degrees from horizontal to minimize the length of strapping material needed for the diagonal run

B. 60 degrees from horizontal to maximize the vertical component of the bracing force at the top plate

C. 45 degrees from horizontal, which provides the most effective resistance to both horizontal and vertical racking forces

D. 90 degrees (vertical) to align with the studs and maximize the connection to the most framing members

56. A carpenter is framing a floor opening for a chimney chase and must maintain the Building Code clearance between the combustible framing and the chimney. What is the minimum clearance between the chimney masonry and all combustible framing?

A. 25 mm to prevent direct contact while maintaining the tightest possible framing around the chase

B. 50 mm on all sides of the chimney to prevent heat transfer from the masonry to the combustible wood framing

C. 100 mm on all sides to provide additional clearance for fire safety beyond the minimum code standard

D. 75 mm on the front face only, with the framing permitted to contact the chimney on the remaining sides

57. A carpenter is installing a manufactured roof truss system and reaches the last truss at the opposite gable end from where the installation began. This final gable end truss has vertical infill webs like the first gable end truss. Before setting this truss, what must the carpenter verify?

A. That the chalk line layout marks on the opposite wall plate match the spacing measured from the first truss

B. That the roofing material has been delivered to the site so sheathing can begin immediately after the last truss

C. That the engineer has approved the installation of the intermediate trusses before the final truss is placed

D. That the final gable end truss is the correct size and matches the opposite gable end truss to produce a symmetrical roof profile

58. A carpenter is building a stud wall and must accommodate a heating duct that passes horizontally through the wall. The duct is 200 mm wide and 100 mm deep. The duct must pass through the wall cavity. What framing modification allows the duct to pass through a 38 × 140 mm stud wall?

A. A horizontal opening is framed within the stud wall using headers above and a sill below the duct, with cripple studs maintaining the stud module above and below

B. Every stud in the duct path is notched 100 mm deep to create a channel for the duct to pass through

C. The wall is built with 38 × 184 mm (2 × 8) studs at the duct location only, with the remaining studs at 2 × 6

D. The duct is rerouted above the ceiling or below the floor because ducts cannot pass through stud walls

59. When framing a gable roof, the carpenter cuts the birdsmouth on each common rafter. After cutting, the carpenter measures the depth of the birdsmouth from the top edge of the rafter to the seat cut. This remaining depth above the seat cut is called the HAP (height above plate). Why is a consistent HAP important?

A. A consistent HAP ensures that all rafters sit at the same height, resulting in a uniform fascia line and a flat roof plane

B. A consistent HAP determines the fire resistance rating of the roof assembly at the wall plate connection

C. A consistent HAP is required for attaching the ceiling strapping at a uniform height across the building

D. A consistent HAP prevents ice dam formation at the eaves by maintaining uniform air space above the insulation

60. A carpenter is installing joist hangers for floor joists bearing on a flush beam. Each hanger requires specific nails — short, thick joist hanger nails (typically 38 mm × 3.33 mm or 1-1/2 inch × 10d connector nails). The carpenter considers using standard 82 mm framing nails instead because they are readily available. Why must joist hanger nails be used instead of framing nails?

A. Joist hanger nails have a larger diameter that provides higher shear capacity per nail, and their shorter length prevents them from penetrating through the beam and creating a hazard on the opposite side

B. Framing nails are not galvanized and will corrode inside the joist hanger, weakening the connection

C. Joist hanger nails have a unique head shape that locks into the hanger holes for a tamper-proof connection

D. Framing nails are too expensive for the quantity of fasteners required to fill all the holes in every hanger

61. A carpenter is installing a pre-hung exterior door in a coastal area with high wind exposure. The door specification calls for a multi-point locking system rather than a standard single-point deadbolt. What advantage does a multi-point lock provide in high-wind conditions?

A. It locks the door at the midpoint only, which is the strongest section of the door against wind pressure

B. It engages locking points at the top, middle, and bottom of the door, compressing the weatherstripping evenly and preventing the door from flexing inward under wind pressure

C. It eliminates the need for weatherstripping because the multiple lock points create an airtight seal

D. It allows the door to be partially opened for ventilation while remaining securely locked at multiple points

62. A carpenter installs a window in a deep wall assembly (38 × 184 mm studs with exterior rigid foam, creating a total wall thickness of approximately 250 mm). The window is set at the exterior face of the sheathing, creating a deep interior reveal. What challenge does this deep reveal present?

A. The deep reveal reduces the amount of natural light entering the room through the window opening

B. The deep reveal requires a wider interior stool and casing to trim the full depth of the opening surface

C. The deep reveal prevents the window from being opened because the sash contacts the deep jamb sides

D. The deep reveal creates thermal bridging through the extended jamb surfaces that reduces wall insulation value

63. A carpenter is installing metal step flashing where a sloped roof meets a vertical wall (such as at a dormer cheek wall or where a roof abuts a two-storey wall). Each piece of step flashing is woven into the shingle courses. How long must each piece of step flashing be?

A. The full length of the wall from the eave to the ridge, installed as a single continuous piece bent into the corner

B. Equal to the width of the roof from ridge to eave, bent at 90 degrees to form an L-shaped piece

C. At least 200 mm (8 inches) long — 100 mm extending up the wall surface and 100 mm extending onto the roof surface beneath the shingle

D. Equal to the shingle exposure plus 50 mm, so each piece extends from beneath the current shingle course to beneath the next course above

64. A carpenter is installing fibre cement lap siding. The manufacturer specifies that each course must overlap the course below by a minimum of 32 mm. The carpenter sets up a story pole to ensure consistent course heights up the wall. What does the story pole ensure at each course?

A. That the siding exposure is consistent from bottom to top so the shadow lines are uniform and the overlap meets the manufacturer's minimum at every course

B. That the siding colour matches from one course to the next by comparing samples at each height

C. That the nail spacing along each course meets the manufacturer's specification at the correct intervals

D. That the horizontal joint between courses remains level from one end of the wall to the other across the span

65. A carpenter is installing continuous soffit ventilation along the eave. The total attic floor area is 120 square metres, and the ceiling has a vapour barrier. Using the 1/300 ratio, what is the total required ventilation area?

A. 0.12 square metres based on dividing the attic area by one thousand instead of the correct ratio

B. 12.0 square metres based on dividing the attic area by ten instead of the correct three hundred ratio

C. 1.20 square metres based on dividing the attic area by one hundred instead of three hundred

D. 0.40 square metres total, split between intake at the soffits and exhaust at the ridge for balanced ventilation

66. A carpenter is installing vinyl corner posts at the exterior corners of a building before installing the horizontal siding. The corner posts are installed first because the siding panels terminate into them. How must the corner post be fastened to accommodate thermal expansion?

A. The top nail is driven tight to hold the post in its final position, and all remaining nails are centred in their slots with clearance

B. All nails are centred in slots with approximately 1 mm clearance between the nail head and the post to allow free movement at every fastening point

C. The bottom nail is driven tight and all nails above are driven with progressive clearance increasing toward the top

D. All nails are driven tight because the corner post is rigid and does not experience thermal expansion

67. When installing an exterior door, the carpenter installs the threshold with a specific relationship to the finished floor on the interior side and the landing or sill on the exterior side. What is the critical height relationship between the interior floor and the exterior landing required by the Building Code?

A. The threshold height must create a maximum step-down from the interior floor to the exterior landing that does not exceed 200 mm for residential applications

B. The interior floor and exterior landing must be at exactly the same height for barrier-free accessibility

C. The exterior landing must be higher than the interior floor to prevent water from flowing into the building

D. The exterior landing must be within one riser height of the interior floor level for safe step-down access

68. A carpenter is applying caulking between the exterior door brick mould and the wall cladding. What type of caulking should be used for this exterior application?

A. Interior latex caulking that can be painted to match the trim colour for a clean finished appearance

B. Acoustical sealant that remains permanently flexible for air barrier and vapour barrier applications

C. A high-quality exterior-grade polyurethane or silicone caulking that remains flexible, adheres to both surfaces, and resists UV degradation and weathering

D. Non-shrink grout applied with a caulking gun for maximum durability at the trim-to-cladding junction

69. A carpenter installs wood shingle siding on the lower half of an exterior wall and vinyl siding on the upper half. At the transition between the two materials, a horizontal trim board separates them. What flashing detail is required at this transition?

A. No flashing is needed because both materials shed water independently without interaction at the joint

B. A Z-flashing or drip cap installed behind the upper cladding material and extending over the top of the trim board to direct water outward

C. A bead of caulking applied along the top edge of the trim board to seal the joint with the upper cladding

D. A strip of housewrap taped horizontally across the transition to bridge between the two cladding types

70. A carpenter is installing exterior window shutters on a building. The shutters are decorative (non-functional) and are mounted directly to the wall cladding surface beside each window. What concern must the carpenter address when fastening through the cladding?

A. The fasteners must be stainless steel because contact with the shutter material causes galvanic corrosion

B. The shutters must be mounted with construction adhesive only to avoid penetrating the weather barrier

C. The fasteners must be long enough to reach through the cladding and into the wall sheathing or framing

D. The fastener penetrations through the cladding and weather-resistive barrier must be sealed to prevent water intrusion behind the cladding at each fastener location

71. A carpenter is installing a continuous ridge vent on a gable roof. The last course of shingles on each side must stop short of the ridge to allow the slot in the sheathing to exhaust air. How far from the ridge should the last shingle course stop?

A. The last shingle course stops at the edge of the sheathing slot, which is typically 25 to 50 mm from the ridge on each side

B. The last shingle course extends over the ridge and is folded down the opposite side for extra protection

C. The last shingle course stops 150 mm from the ridge to allow for the ridge vent width on each side

D. The last shingle course stops at the centreline of the ridge board regardless of the sheathing slot width

72. A carpenter has completed the exterior cladding installation on a building and notices that the bottom course of siding sits directly on the concrete foundation with no gap. Why is this a problem?

A. Siding in contact with the foundation absorbs ground moisture through capillary action, which causes the siding material to rot, swell, or delaminate

B. The siding blocks the view of the foundation for the termite inspector's annual inspection requirement

C. The siding prevents the foundation dampproofing from curing properly if the coating is still wet

D. The siding insulates the foundation excessively, preventing the concrete from releasing moisture

73. A carpenter is installing aluminum fascia coil stock (pre-finished aluminum) over a wood fascia board. The aluminum is bent on site using a brake to match the fascia profile. Why is aluminum fascia cover installed over the wood rather than replacing the wood entirely?

A. Aluminum fascia alone is not strong enough to support the weight of the gutter system without wood backing

B. The aluminum cover eliminates the need for periodic painting of the wood fascia while the wood provides the structural backing for gutter attachment and sheathing nailing

C. Aluminum fascia is required by the Building Code only as a fireproofing measure over combustible wood

D. The wood fascia must remain for the building inspector to verify the lumber species and grade during inspections

74. A carpenter notices that the ice and water shield membrane along the eave of a roof has been installed with only a 50 mm overlap between adjacent sheets. The manufacturer specifies a minimum 75 mm overlap. Why is the 50 mm overlap insufficient?

A. The reduced overlap may not provide a watertight seal at the lapped joint, allowing water to penetrate between the sheets and reach the sheathing beneath the membrane

B. The reduced overlap changes the colour of the membrane at the joint, creating a visible line through the shingles

C. The reduced overlap does not meet the minimum material requirement for the warranty coverage period

D. The reduced overlap causes the membrane to buckle between the lapped sheets, creating ridges visible through the shingles

75. A carpenter is installing a porch ceiling using tongue-and-groove cedar boards. The boards are installed perpendicular to the porch joists above. What fastening method produces the cleanest finished appearance?

A. Blind nailing through the tongue of each board with finishing nails so the groove of the next board conceals the fasteners

B. Face nailing through each board with stainless steel screws in a regular pattern for a visible decorative effect

C. Adhesive-only attachment to the joists above using exterior-grade construction adhesive without nails

D. Stapling through the face of each board with galvanized staples that are puttied and painted after installation

76. A carpenter is installing an exterior light fixture on a wall that has been clad with vinyl siding. The fixture must be mounted on a vinyl mounting block. What is the primary reason for using the mounting block rather than mounting the fixture directly to the siding surface?

A. The mounting block is required by the electrical code for all exterior light fixture installations on any surface

B. The mounting block provides a weatherproof transition between the fixture base and the siding surface

C. The mounting block provides a flat, rigid, and weathertight surface for the fixture while maintaining the siding's ability to expand and contract freely behind it

D. The mounting block increases the standoff distance between the fixture and the wall to prevent heat transfer

77. A carpenter is installing drywall on a ceiling where the truss bottom chords are not perfectly level — some chords are 5 to 8 mm higher or lower than adjacent chords. Rather than applying the drywall directly to the uneven trusses, what should the carpenter do to create a flat ceiling?

A. Apply extra joint compound at the low spots after the drywall is installed to fill in the visible depressions

B. Install ceiling strapping perpendicular to the trusses, shimming the strapping at the low spots to create a flat nailing plane for the drywall

C. Hang the drywall directly on the trusses and sand the high spots after the first coat of compound is applied

D. Install a suspended ceiling grid below the trusses to avoid dealing with the unevenness of the framing

78. A carpenter is installing solid hardwood flooring in a room with a concrete fireplace hearth that projects from the wall into the room. The flooring must terminate at the hearth edge. What detail is used at this transition?

A. The flooring is butted directly against the hearth stone with no gap, and the joint is sealed with caulking

B. The flooring is cut to leave a 25 mm gap from the hearth that is filled with a flexible foam backer rod

C. A wood reducer strip is installed at the hearth edge to transition from the flooring thickness to the hearth level

D. The flooring is terminated with a standard expansion gap and a stone or metal threshold strip covers the gap between the flooring and the hearth

79. A carpenter is installing interior window casings and must cut a mitre at the top corner where the side casing meets the head casing. The carpenter measures the head casing length from reveal line to reveal line on the jamb. This measurement represents the short point of the mitre. Why does the carpenter use the short point measurement for the head casing?

A. The short point measurement equals the inside dimension of the casing opening, and the mitre adds the additional length needed to reach the outside edge of the casing profile

B. The short point measurement is easier to mark on the casing stock than the long point measurement

C. The short point represents the visible portion of the casing that matters for aesthetic appearance only

D. The short point is the only measurement that can be taken accurately from the installed jamb surface

80. A carpenter is installing a pre-hung bifold door for a closet opening. The bifold track is installed on the underside of the head jamb. The track must be perfectly straight and level for the doors to operate smoothly. If the head jamb sags in the centre, what problem will the bifold doors experience?

A. The doors will bind at the top when they are in the open (folded) position near the track centre

B. The doors will swing freely and will not stay in the open position because gravity pulls them closed

C. The doors will rub against the floor at the centre of the opening because the sagging track pushes them down

D. The doors will rattle in the track because the increased clearance at the centre allows vertical movement

81. A carpenter is constructing a stairway with 15 risers. The stairway has an intermediate landing where the stair changes direction by 90 degrees (an L-shaped stairway). There are 8 risers below the landing and 7 risers above it. How many treads are below the landing, and how many are above?

A. 8 treads below and 7 treads above, matching the riser count in each section for a one-to-one ratio

B. 7 treads below and 7 treads above, because the landing serves as the 8th tread in the lower section

C. 8 treads below and 6 treads above, because both the landing and the upper floor replace treads

D. 7 treads below and 6 treads above, because the landing replaces one tread below and the upper floor replaces one tread above

82. A carpenter is installing door casing and finds that the wall surface is not flush with the edge of the jamb — the drywall protrudes approximately 3 mm past the jamb face. When the casing is installed with the reveal set from the jamb edge, a gap appears between the back of the casing and the wall surface. What is the simplest solution?

A. Plane or sand the drywall edge down flush with the jamb surface before installing the casing trim

B. Shim the casing at the wall contact points with thin strips of cardboard until the casing sits flat against both the jamb reveal and the wall surface

C. Install wider casing that spans from the jamb to beyond the raised drywall edge without bridging

D. Add another layer of drywall compound to the wall near the jamb to build it flush with the casing back

83. A carpenter is installing kitchen cabinets in a room where the walls meet at a corner that is not exactly 90 degrees — it measures 87 degrees. The base cabinets in the corner will have a gap between the cabinet back and the wall on one side. How is this gap typically addressed?

A. A filler strip is scribed to the wall contour and installed between the cabinet and the wall to close the gap while maintaining square cabinet alignment

B. The cabinet is rotated to follow the wall angle, accepting that the cabinet face will not be parallel to the opposite wall

C. The wall is rebuilt at the correct angle before the cabinets are installed to eliminate the gap entirely

D. The gap is filled with expanding spray foam and covered with a piece of trim moulding after the foam cures

84. A carpenter is installing laminate floating floor in a large open-concept room that measures 12 metres by 8 metres. The manufacturer's installation guide specifies a maximum continuous run of 10 metres without an expansion break. How must the carpenter accommodate the 12-metre room dimension?

A. Install the flooring in a single continuous field and accept that the ends may buckle slightly during expansion

B. Install the flooring in a single continuous field but leave a 25 mm perimeter gap instead of the standard 12 mm

C. Install a T-molding expansion joint at an intermediate point (such as a doorway or logical division) to break the 12-metre dimension into two shorter runs

D. Install the flooring perpendicular to the 12-metre dimension so the maximum run is only 8 metres

85. A carpenter is installing a stairway handrail between two walls (a closed stairway with walls on both sides). The handrail is mounted to the wall with brackets. What is the minimum clearance required between the handrail and the wall surface?

A. No minimum clearance is required because wall-mounted handrails can be flush against the wall surface

B. 25 mm to allow the user's fingers to wrap around the underside of the handrail without contacting the wall

C. 75 mm to provide full hand clearance for users wearing heavy work gloves during occupancy of the building

D. A minimum of 40 to 50 mm clearance between the handrail and the wall so the user can fully grip the rail

86. A carpenter is installing an interior solid-core door in a fire-rated wall between a garage and the living space. The door must carry a fire rating. What additional component must this fire-rated door have that a standard interior door does not?

A. A deadbolt lock in addition to the passage lockset for security at the fire separation boundary location

B. A self-closing device (door closer or spring hinges) that ensures the door returns to the closed position automatically after each use

C. A peephole or vision panel that allows occupants to check conditions on the garage side before opening

D. A kick plate at the bottom of the door to protect the fire-rated surface from damage by foot traffic

87. A carpenter is installing base shoe moulding (quarter-round) along a wall where the hardwood flooring meets the baseboard. The shoe moulding encounters an outside corner where two walls meet. What joint type is used at this outside corner?

A. A mitred joint with both pieces cut at 45 degrees, glued, and pinned with a brad nail to keep the joint tight

B. A coped joint where one piece is butted into the corner and the other piece is cut to match the profile

C. A butt joint where both pieces are cut square and pressed against each other at the corner intersection

D. A scarf joint where both pieces are cut at shallow opposing angles and overlapped at the corner location

88. A carpenter is installing a window stool and discovers that the window frame is not centred in the rough opening — it is shifted 10 mm to one side. This means the jamb extensions (if used) or drywall returns on each side of the window will be unequal widths. How should the carpenter handle the casing installation?

A. Reinstall the window centred in the opening before proceeding with any interior trim installation work

B. Install the casing with equal reveals on each side of the jamb, accepting that the casing-to-wall relationship will differ

C. Install the casing with equal distances from the window glass on each side so the casings appear centred on the window visually

D. Split the difference by adjusting the reveal on each side so the casings appear reasonably centred when viewed

89. A carpenter is building a winder stairway — a stair that turns a corner using tapered treads (winders) instead of a landing. The Building Code has specific requirements for winder treads. At what point on the winder tread is the minimum tread depth measured?

A. At the outer (widest) end of the tapered tread where the dimension is greatest for comfortable footing

B. At the centreline of the stairway width, which represents the typical walking path on the tapered tread

C. At the intersection of the two wall surfaces at the inside corner of the turn where the tread is narrowest

D. At a distance of 150 mm from the narrow end of the tread, where the Building Code specifies the measurement point for minimum tread depth

90. A carpenter finishes installing a pre-hung interior door and checks the clearance between the bottom of the door slab and the finished floor. The gap is 25 mm. The standard clearance is approximately 12 mm. What is the most likely cause of this excessive gap?

A. The door rough opening was framed too tall, and the head jamb was shimmed up rather than down, leaving the door slab elevated above the correct height relative to the finished floor

B. The door slab was trimmed at the factory to a shorter height than specified for the frame size

C. The hinge screws have pulled out slightly, allowing the door to drop lower in the frame than intended

D. The finished floor is thicker than anticipated, raising the floor height and reducing the apparent gap

91. A carpenter is renovating a bathroom in a 1940s home. When removing the existing plaster walls, the carpenter discovers that the wall behind the bathtub has no moisture protection — no vapour barrier, no cement board, and no waterproofing membrane. The bare wood studs show signs of early-stage moisture damage. What must the carpenter install during the renovation to correct this deficiency?

A. Standard drywall with a coat of moisture-resistant paint applied to the surface before tile installation

B. Moisture-resistant green board drywall set directly against the studs with tile adhered to the surface

C. Cement backer board with a waterproofing membrane applied to the wet-area surfaces, installed over the studs with appropriate vapour management behind

D. Standard drywall with polyethylene sheeting stapled to the studs behind the drywall for moisture protection

92. A carpenter is renovating a kitchen and must extend the existing electrical circuit to add two new outlets above the countertop. The existing circuit uses 14-gauge wiring on a 15-amp breaker. Can the carpenter extend this circuit by splicing new wiring to the existing circuit?

A. Yes, as long as the carpenter uses the same wire gauge and installs proper junction boxes with covers

B. No — electrical work including circuit extensions must be performed by a licensed electrician or under electrical permit with proper inspection

C. Yes, if the carpenter has completed a basic electrical safety course within the past two years

D. No, because extending an existing circuit always requires upgrading to a 20-amp breaker and 12-gauge wire

93. During a renovation, a carpenter removes the floor in a hallway and discovers that the floor joists span 4.0 metres with no intermediate support. The joists are 38 × 184 mm (2 × 8) at 400 mm on centre. The carpenter checks the Building Code span tables and determines that this joist size can span a maximum of 3.8 metres for the required loading. The joists are spanning 200 mm beyond their allowable span. What should the carpenter do?

A. Leave the joists as-is because they have been supporting the floor without visible problems for decades

B. Report the over-span condition to the building inspector and disregard it because it is an existing condition

C. Add reinforcing (such as sistering additional joists or installing a mid-span beam) because the renovation triggers review of the existing floor structure

D. Reduce the live load by specifying lighter flooring materials that decrease the total weight on the overspanned joists

94. A carpenter is removing old asphalt floor tiles in a pre-1985 building. Testing has confirmed that the tiles contain asbestos. The carpenter holds a general carpenter's trade certificate but has no asbestos abatement training or certification. Can the carpenter legally remove these tiles?

A. No — asbestos-containing materials must be removed by workers with specific asbestos abatement training and certification under the applicable provincial OHS regulations

B. Yes, as long as the carpenter wears a standard N95 dust mask and wets the tiles before removal

C. Yes, because floor tiles are classified as non-friable asbestos and do not require specialized training

D. No, but the carpenter can supervise an untrained labourer who performs the actual tile removal work

95. A carpenter is adding an addition to an existing house. The new addition foundation must connect to the existing foundation. At the junction, the new footing must be at the same depth as the existing footing. Why is matching the footing depth at the junction critical?

A. Different footing depths create different amounts of lateral earth pressure on each side of the junction

B. Matching footing depths is only an aesthetic requirement to ensure the foundation walls appear uniform

C. Different footing depths at the junction cause differential settlement and frost heave that can crack the foundation and building structure at the connection

D. Different footing depths are permitted by the Building Code and do not create any structural concern

96. A carpenter discovers during a renovation that an existing floor joist has been notched at mid-span to accommodate a drain pipe. The notch is in the bottom edge of the joist and removes approximately 30% of the joist depth. Why is a bottom-edge notch at mid-span especially problematic?

A. Bottom-edge notches at mid-span create a tripping hazard for workers accessing the floor cavity below

B. The bottom edge of a joist at mid-span is in the tension zone where bending stresses are highest — a notch at this location dramatically reduces the joist's load capacity and can cause failure

C. Bottom-edge notches collect moisture from condensation that accelerates rot at the notch location

D. Bottom-edge notches at mid-span violate the fire code because they create a pathway for flame spread

97. A carpenter is performing an energy retrofit and adds blown-in cellulose insulation to the attic of an existing house. Before blowing the insulation, what must the carpenter install at the eaves to prevent the insulation from blocking the soffit ventilation?

A. Additional soffit panels with larger perforations to increase the airflow capacity at the eave vents

B. A continuous ridge vent to replace the existing gable end vents for improved attic exhaust capacity

C. Weatherstripping around the attic access hatch to prevent conditioned air from entering the attic space

D. Insulation baffles (ventilation chutes) between each rafter pair at the eaves to maintain a clear air channel from the soffit vents into the attic space above the insulation

98. A renovation project involves converting a detached garage into a home office (an accessory dwelling use). What Building Code requirements are triggered by this change of use that would not apply to a standard garage?

A. The converted space must meet Building Code requirements for a habitable room, including minimum ceiling height, natural light (window area), ventilation, insulation, heating, egress, and fire separation from adjacent structures

B. Only electrical upgrades are required because the existing structure provides adequate shelter from weather

C. The space only needs a permit if plumbing is being added — dry conversions do not require permits

D. The existing garage structure is automatically exempt from current building code because it was built before the conversion

99. A carpenter is repairing a section of rotted exterior wall sheathing discovered during a cladding replacement. After removing the rotted OSB, the carpenter finds that the studs behind the sheathing are stained but structurally sound — they pass the probe test (an awl does not penetrate the wood easily). Should the carpenter treat or replace these stained studs?

A. Replace all stained studs regardless of structural condition because staining indicates permanent weakening

B. Apply a wood preservative to the stained surfaces and install a self-adhesive waterproofing membrane over the studs before new sheathing

C. The studs can remain in place if they are structurally sound — the staining indicates past moisture exposure but does not necessarily mean the wood is compromised

D. Wrap each stud individually in polyethylene before installing new sheathing to prevent future moisture contact

100. A carpenter completes a renovation that involved removing a bearing wall and installing a new LVL beam with posts on steel base plates bearing on new footings. The building inspector arrives for the framing inspection. What documentation should the carpenter have available for the inspector?

A. The original building plans from when the house was first constructed showing the location of the removed wall

B. The structural engineer's sealed drawings showing the beam size, post sizes, connection details, footing sizes, and load calculations for the modification

C. A written statement from the homeowner approving the wall removal and accepting responsibility for the work

D. Photographs taken during the demolition showing the condition of the wall before it was removed from the building

Practice Exam 6: Answer Key and Explanations

1. B — A sliding compound mitre saw combines three capabilities: the turntable rotates for mitre cuts, the blade head tilts for bevel cuts, and the sliding carriage extends the crosscut capacity for wider stock. This combination allows the carpenter to make compound cuts (simultaneous mitre and bevel) in a single pass — essential for crown moulding, which sits at an angle between the wall and ceiling.

2. D — Powder-actuated tools use explosive charges to drive fasteners into concrete and steel. They are classified as explosive-actuated tools and require specific training and certification on the model being used before operation. Untrained users risk misfires, ricochets, and through-penetrations that can injure or kill workers on the opposite side of the material.

3. A — The first priority when a worker collapses is to call emergency medical services (911) immediately. While waiting for EMS, the carpenter should provide first aid within their level of training — checking for responsiveness, ensuring the airway is open, and beginning CPR if the worker is not breathing. Delaying the emergency call costs critical minutes.

4. C — An N95 disposable particulate respirator filters at least 95% of airborne particles, including the fine wood dust and copper-based preservative particles generated when cutting pressure-treated lumber. While outdoor ventilation disperses some dust, the saw generates concentrated dust at the breathing zone that requires respiratory protection regardless of ventilation.

5. A — Canadian OHS legislation requires fall protection when a worker is exposed to a fall of 3 metres (10 feet) or more — regardless of the roof slope. Some jurisdictions require protection at lower heights near unprotected edges or openings. The slope of the roof does not eliminate the fall hazard; it only affects whether the worker can maintain footing on the surface.

6. D — Loose concrete blocks can crack under concentrated scaffold loads, shift laterally on the soil surface, or crush if a defective block is in the stack. Any of these failures causes sudden, uncontrolled settlement of the scaffold leg, which can trigger progressive collapse of the entire scaffold. Only purpose-built base plates on continuous mud sills are acceptable for scaffold base support.

7. C — The dorsal D-ring is located between the shoulder blades on the back of the harness. This position centres the arrest force at the body's centre of mass, keeping the worker upright during and after a fall arrest. Front or side attachment points are used for positioning and climbing, but the dorsal D-ring is the only approved primary attachment for fall arrest.

8. A — Wind causes the boom to sway and can push the platform laterally, destabilizing the machine. The carpenter must lower the boom immediately and discontinue work until wind conditions are assessed. Boom lifts are particularly susceptible to wind because the extended boom creates a large moment arm that amplifies lateral forces.

9. B — At a 45-degree sling angle, each leg carries load ÷ (2 × sin 45°) = 450 ÷ (2 × 0.707) = 318 kg per leg. Each sling's effective capacity at 45 degrees is 500 × 0.707 = 354 kg. The 318 kg per leg is within the 354 kg capacity, but the margin is only 10% — well below the standard safety factor. This rigging provides inadequate margin and should use higher-rated slings.

10. D — A ladder with a defective rung lock is a fall hazard — the fly section can slide unexpectedly while a worker is climbing, causing a fall from height. The ladder must be tagged as defective, removed from the work area to prevent accidental use, and reported to the supervisor for professional repair or disposal. Improvised fixes are never acceptable.

11. C — Workers must report to the emergency assembly point whenever the site evacuation alarm sounds or whenever an authorized person orders an evacuation, regardless of the reason. The assembly point allows the site safety officer to conduct a headcount and confirm that all workers have exited the danger zone. Waiting to finish a task before evacuating puts lives at risk.

12. A — Roofing nails have a large, flat head (approximately 10 mm diameter) designed to hold shingles flat, and a smooth shank designed for the roofing nailer's magazine and driving mechanism. Framing nails have a smaller head, different shank type, and may not feed, drive, or hold properly in a roofing nailer. Mismatched fasteners can also damage the nailer's internal mechanism.

13. D — The grid system establishes a coordinate reference that allows every structural element — columns, walls, beams, footings — to be precisely located on the drawings and on the actual site using two-axis reference lines. Grid lines are labelled with letters on one axis and numbers on the other, and every element is dimensioned relative to these grid lines.

14. B — A door schedule centralizes all door specifications — size, type, material, fire rating, hardware set, and frame type — in one table rather than scattering this information across multiple drawings. This ensures that every door is ordered, framed, and installed with the correct specifications, reducing errors and omissions during construction.

15. C — Elevation difference = 101.500 − 100.800 = 0.700 m. Slope = elevation difference ÷ horizontal distance = 0.700 ÷ 35 = 0.020 = 2.0%. This calculation is the standard method for determining slope from two known elevations and the horizontal distance between them. A 2% slope provides effective drainage for surface water.

16. A — A builder's level should be calibrated at least annually and immediately after any impact event — being dropped, knocked over by equipment, or subjected to any force that could displace the internal compensator or optical elements. Regular calibration ensures the instrument provides accurate readings for all layout and elevation work.

17. D — The point of beginning (POB) is the primary horizontal reference point from which all building layout dimensions originate. It is typically established at one corner of the building by the surveyor using the property boundary pins and the setback dimensions from the site plan. All subsequent layout measurements — building lines, offset lines, column locations — are taken from this point.

18. B — Different lumber species and grades have different allowable bending stresses (Fb) and modulus of elasticity (E) values that directly determine how far a joist can span under a given load. A higher-grade, stiffer species (such as Douglas fir Select Structural) can span farther than a lower-grade, less stiff species (such as SPF No. 2) at the same size and spacing.

19. C — A story pole is a straight board with marks at each course height — the combined dimension of one unit of material (brick, block, shingle) plus one mortar joint or overlap. The pole is held vertically against the wall and the marks are transferred to the substrate, ensuring that every course across the building is at a consistent and uniform height.

20. D — Total roof area ÷ area per square = number of squares. 195 m² ÷ 9.29 m² per square = 20.99 squares, rounded up to 21 squares. One roofing square covers 100 square feet or 9.29 square metres. This conversion is necessary for ordering shingles, which are sold by the square (typically three bundles per square).

21. A — The centre of a rectangle is found by dividing each dimension in half. Centre = 5.4 ÷ 2 = 2.7 m from the short wall and 7.2 ÷ 2 = 3.6 m from the long wall. This point is equidistant from all four walls and is the starting reference for radial layouts, centred fixtures, and balanced tile or flooring patterns.

22. C — Total roof area = 2 planes × (12.0 m × 5.0 m) = 2 × 60 = 120 m². Panel area = 1.22 × 2.44 = 2.977 m². Sheets required = 120 ÷ 2.977 = 40.3, rounded up to 41 sheets. Before rounding, the answer is approximately 40 sheets. A waste allowance of 5–10% should be added to account for cutting waste at hips, valleys, and edges.

23. D — Different chalk colours are used to distinguish between layout lines for different purposes — wall locations, plumbing rough-in, electrical rough-in, HVAC ductwork, and temporary reference lines. Using a single colour for all purposes creates confusion when multiple trades reference the same subfloor area. Colour coding prevents costly errors.

24. B — The elevation of the laser plane = benchmark elevation + laser height above benchmark = 100.000 + 1.85 = 101.850 m. The Height of Instrument concept applies identically to both optical and laser levels — the laser plane replaces the line of sight as the reference from which foresight and backsight readings are taken.

25. D — Anchor bolts positioned directly beneath stud locations prevent the carpenter from tightening the nut and washer after the sill plate and wall are in place, because the stud sits on top of the bolt and blocks wrench access. Bolts must be offset from stud positions to allow the washer and nut to be installed and tightened after the wall framing is erected.

26. A — CSA O141 governs the grading rules for softwood lumber used in construction, including species identification, grade classification (Select Structural, No. 1, No. 2, No. 3), grade stamp requirements, allowable defects, and moisture content limits. Compliance with this standard ensures that the lumber meets the strength and quality assumed in the Building Code span tables.

27. B — Manufactured fibre tube forms (sonotubes) are the standard method for forming round concrete columns of this size. They are single-use cardboard tubes coated with a wax or polyethylene release

layer, available in standard diameters from 150 mm to 1,500 mm. They are cut to the column height, braced plumb, and stripped by peeling the tube away after the concrete cures.

28. D — The minimum inside bend radius for standard grade rebar is typically six times the bar diameter. For a 15M bar (16 mm diameter), the minimum bend radius is 6 × 16 = 96 mm. Bending tighter than this radius stresses the steel beyond its ductility limit and can cause micro-fractures that weaken the bar at the bend.

29. A — Undisturbed native soil has the bearing capacity indicated in the geotechnical investigation. Fill, disturbed soil, or loose backfill may have significantly lower and unpredictable bearing capacity that cannot reliably support the footing design loads. If the excavation encounters fill or disturbed soil, the engineer must be consulted before the footing is poured.

30. C — A window buck is lighter than the wet concrete surrounding it and will float upward (like a boat) due to the buoyancy force of the dense liquid concrete. The buck must be securely braced to the form panels on both sides and tied to the reinforcing steel within the wall to resist this buoyancy force during the pour.

31. B — Radiant heating tubes must be secured to the reinforcement mesh or on chairs at the specified depth within the slab and pressure-tested before the pour to verify they have no leaks. A leak discovered after the concrete has cured requires demolishing and replacing the slab. The pressure test with air or water confirms tube integrity while repair is still possible.

32. D — Bug holes are caused by small air bubbles trapped against the form surface that were not expelled during vibration. The bubbles form spherical voids that appear as small circular holes when the forms are stripped. More thorough vibration — particularly with the vibrator held close to the form surface — reduces bug holes by driving the trapped air upward.

33. A — Control joints in concrete walls are formed by inserting premoulded joint strips or by attaching a formed groove (a bevelled strip or rubber profile) to the inside face of the form at the specified intervals. These create a weakened plane in the wall where shrinkage cracking is directed to occur in a controlled, straight line rather than randomly.

34. C — A wedge driven at a steep angle contacts the tie bracket over a very small bearing area — the edge of the wedge rather than its flat face. This concentrated contact can allow the wedge to slip under

the lateral pressure of the concrete during the pour, losing the tie connection and potentially causing a form blowout at that location.

35. B — The lateral pressure of wet concrete on wall forms increases with the rate of pour. A faster rate means more concrete is placed before the lower concrete begins to stiffen, resulting in greater hydrostatic pressure at the bottom of the form. Exceeding the form's design pour rate creates pressure that surpasses the tie and waler capacity, risking blowout.

36. D — Normal-weight fresh concrete (standard mix with natural sand and gravel aggregate) has a density of approximately 23.5 kN/m³ (approximately 150 pounds per cubic foot or 2,400 kg/m³). This value is used for calculating the dead load of concrete on formwork, shoring, and structural members during design.

37. A — At 8°C overnight, the concrete temperature will drop below the 10°C minimum required for adequate hydration. Insulating blankets placed over the fresh concrete trap the heat generated by the hydration reaction (exothermic) and maintain the concrete temperature above the minimum. This is the most practical and cost-effective cold weather protection for footings.

38. C — Non-shrink grout maintains full-contact bearing between the base plate and the foundation. Standard grout shrinks as it cures, developing gaps that create point loading — the plate bears only on the shims rather than across its full area. Non-shrink grout expands slightly to fill the entire space, ensuring uniform load distribution across the full plate area.

39. B — Shores beneath a suspended landing slab must remain until the concrete reaches 70–75% of its 28-day design strength. This is the same requirement as for any suspended concrete element — the concrete must be strong enough to carry its own weight plus construction loads before the temporary support is removed. This typically requires 7 to 14 days.

40. A — While pre-pour installation is the preferred method, isolation joints can be installed after curing by cutting a groove with a concrete saw along the slab-to-wall junction and filling it with compressible joint filler material. The saw cut creates the physical separation between the slab and the wall that allows independent movement.

41. C — Standing water at the bottom of a trench dilutes the concrete at the contact surface, increasing the water-to-cement ratio and creating a weak, porous layer at the base of the footing — exactly where

the highest bearing stresses occur. The water must be removed by pumping or bailing before concrete placement begins.

42. B — Concrete from different truck loads may have been batched at different times. The earlier load has been hydrating longer and begins to stiffen before the later load. This is especially common on large pours where multiple trucks deliver concrete sequentially. Coordination of delivery timing and pour sequence minimizes this inconsistency.

43. A — Lapped joists at a beam must be nailed together where they overlap. The Building Code typically requires a minimum of three nails through the overlapping section to connect the lapped joists, transferring lateral and vertical loads between the members. This connection prevents the joists from separating and ensures they share loads across the beam.

44. C — Solid blocking between the studs at the mounting height provides a continuous, rigid nailing surface behind the drywall for the television bracket fasteners. The bracket screws penetrate through the drywall and into the solid wood blocking, providing far greater pull-out resistance than drywall alone or even stud-mounted screws in framing that may not align with the bracket holes.

45. B — Excessively crowned joists that create a visible hump in the floor must be corrected by planing or trimming the top edge until they are flush with the adjacent joists. This is done before the subfloor is installed. Attempting to force the subfloor down over the hump damages the panel and creates a permanent high spot in the floor.

46. D — The Building Code limits hole and notch sizes in studs based on the stud depth and the location of the penetration. For a 38 × 140 mm stud, the maximum hole diameter is typically 40% of the stud depth (approximately 56 mm), which is too small for a 75 mm pipe. The pipe must pass through the wall plates and blocking, or the wall must be framed with deeper studs.

47. A — Cripple studs above headers maintain the regular on-centre stud spacing module across the opening so that sheathing and drywall panel edges consistently land on framing members for nailing. Without cripple studs, panel edges above the header fall between king studs and have no nailing surface, causing loose edges that crack and buckle.

48. C — A connector plate that has separated from the wood — even partially — has lost a significant portion of its tooth embedment and load-carrying capacity. The truss joint may fail under load.

Hammering the plate back does not restore the engineered connection. The truss must be rejected and replaced with a sound unit from the manufacturer.

49. B — The Building Code span tables (Part 9) and the Canadian Wood Council's span calculator provide the maximum allowable span for each joist size based on species, grade, spacing, and load conditions. These are the authoritative references for deck joist spans. Lumber grade stamps do not list spans, and neighbouring properties may not meet current code.

50. D — Run = span ÷ 2 = 9.6 ÷ 2 = 4.8 m. Rise = run × (unit rise ÷ unit run) = 4.8 × (4 ÷ 12) = 4.8 × 0.333 = 1.6 m. The ridge height above the wall plate is 1.6 metres. Using the full span instead of the run would double the answer to 3.2 m — the most common error in roof rise calculations.

51. A — The Building Code limits notch depth in load-bearing studs to approximately one-quarter of the stud depth for notches in the outer third of the stud length. The notch must also be protected with a steel strike plate (typically 1.5 mm thick) to prevent accidental penetration by nails or screws driven through the finish materials into the notched area.

52. C — Glulam beams are engineered with specific lamination grades placed at specific positions within the cross-section. The tension side (bottom in a beam) uses higher-grade laminations than the compression side (top). Installing the beam upside down places the lower-grade laminations in the tension zone, dramatically reducing the beam's load capacity.

53. D — Hip rafter line length = run in feet × hip unit line length ÷ 12 = 13.12 × 18.76 ÷ 12 = 246.13 ÷ 12 = 20.5 feet. The hip unit line length (18.76 inches per foot of common rafter run at 8/12 pitch) gives the result in inches, which must be divided by 12 to convert to feet. The hip rafter is significantly longer than the common rafter for the same building.

54. A — The double top plate lap at corners creates a structural tie that locks the two intersecting walls together, preventing the corner from pulling apart under lateral loads (wind, seismic) or from spreading under vertical loads from the roof. Without this lap, the walls are only connected by nails at the corner stud assembly, which is insufficient for load transfer.

55. C — Metal strap bracing at 45 degrees provides the most effective resistance to lateral racking forces because the diagonal force component efficiently resolves into both horizontal and vertical reactions at the connections. Steeper angles reduce the horizontal resistance, while shallower angles reduce efficiency and require longer straps.

56. B — The Building Code requires a minimum 50 mm (2-inch) clearance between the chimney masonry and all combustible framing materials on all four sides. This clearance prevents heat transfer from the chimney to the wood, which could ignite the framing. The clearance must be maintained from the foundation to the roof on every side.

57. D — The final gable end truss must be verified to match the first gable end truss in span, height, pitch, and web configuration to produce a symmetrical roof. If the trusses are different sizes or profiles, the ridge line will not be straight, the roof planes will not be uniform, and the sheathing and roofing will not lay flat.

58. A — A horizontal opening is framed within the stud wall using headers above and a sill below the duct, with cripple studs maintaining the regular stud module above and below the opening. This is the same framing method used for window openings, scaled to the duct dimensions. Notching studs 100 mm deep would exceed the allowable notch depth.

59. A — A consistent HAP (height above plate) across all rafters ensures that the top edges of all rafters form a flat plane — the roof surface. If one rafter has a deeper birdsmouth (lower HAP), its top edge sits lower than the adjacent rafters, creating a dip in the roof sheathing. Inconsistent HAPs produce a wavy roof surface and an uneven fascia line.

60. A — Joist hanger nails have a larger diameter (typically 3.33 mm or 0.131 inches) than standard framing nails of the same length, providing significantly higher shear capacity per nail. Their shorter length (38 mm) prevents them from penetrating through the beam and creating a hazard. Using longer, thinner framing nails reduces the connection's rated capacity.

61. B — A multi-point lock engages locking points at three or more positions along the door height — typically top, middle, and bottom. This pulls the door tight against the weatherstripping at every point, compressing it evenly and preventing the door from flexing inward under wind pressure. A single-point lock allows the door to bow between the lock and the hinges.

62. D — A deep wall assembly creates a wide interior reveal (the visible surface between the window frame and the room face of the wall) that must be finished with extended jamb liners, wider stools, deeper casing returns, or drywall returns. This additional trim work requires careful planning and precise fitting to produce a clean, professional appearance.

63. C — Step flashing is installed as individual pieces woven into each shingle course. Each piece is at least 200 mm long — 100 mm extending up the vertical wall surface (behind the wall cladding or housewrap) and 100 mm extending horizontally onto the roof surface beneath the shingle. This L-shaped overlap directs water from the wall onto the roof at every course.

64. A — The story pole ensures that every course of siding has the same exposure from bottom to top of the wall, producing uniform shadow lines and guaranteeing that the overlap meets or exceeds the manufacturer's minimum at every course. Without a story pole, courses can gradually drift off alignment, resulting in inconsistent exposure and inadequate overlap.

65. D — Total ventilation area = attic floor area × 1/300 = 120 ÷ 300 = 0.40 m² total. This ventilation area is split between intake (soffits) and exhaust (ridge vent), typically in a balanced 50/50 ratio — 0.20 m² of soffit vent area and 0.20 m² of ridge vent area. The 1/300 ratio applies when a vapour barrier is present in the ceiling.

66. B — All nails fastening vinyl corner posts (and all vinyl siding components) must be centred in their slots with approximately 1 mm clearance between the nail head and the surface. This allows the corner post to expand and contract freely along its length with temperature changes. Driving any nail tight pins the component and causes buckling.

67. A — The Building Code requires that the step-down from the interior floor to the exterior landing at an exterior door not exceed 200 mm (approximately 8 inches) for residential applications. This maximum height ensures a safe transition — a larger step-down creates a tripping and falling hazard, especially in low-light conditions.

68. C — Exterior joints between door trim and wall cladding require a high-quality exterior-grade caulking (polyurethane or silicone-based) that remains permanently flexible, adheres to both surfaces, and resists UV degradation, temperature cycling, and weathering. Interior latex caulking and acoustical sealant are not formulated for exterior exposure.

69. B — A Z-flashing or drip cap installed behind the upper cladding material and extending over the top of the horizontal trim board directs water running down the wall surface over the face of the trim rather than behind it. Without this flashing, water reaches the top edge of the trim and is drawn behind it by capillary action, causing concealed rot.

70. D — Every fastener that penetrates through the cladding and weather-resistive barrier creates a potential water entry point. Each penetration must be sealed with exterior-grade caulking or a gasket beneath the fastener head to prevent water from migrating through the hole, behind the cladding, and into the wall cavity.

71. A — The last shingle course stops at the edge of the sheathing slot — typically 25 to 50 mm from the ridge on each side. The ridge vent sits over the slot, and the cap shingles cover the ridge vent. The sheathing slot provides the opening for attic air to exhaust through the vent, and the shingles must not cover or block this slot.

72. C — Siding must be held a minimum of 150 mm (6 inches) above the finished grade to prevent ground moisture from wicking up into the siding material through capillary action. Siding in contact with soil or concrete absorbs moisture that causes rot in wood siding, swelling in fibre cement, and staining in vinyl. The gap also allows visual inspection of the foundation.

73. B — The aluminum fascia cover eliminates the need for periodic repainting of the wood fascia — a time-consuming and expensive maintenance task. The wood fascia remains in place because it provides the structural backing for attaching the gutter system and supports the roof sheathing edge nailing. The aluminum is purely a maintenance-free finish layer.

74. D — The manufacturer specifies a minimum 75 mm overlap to ensure that the self-adhesive bond between the sheets creates a continuous, watertight seal. A 50 mm overlap may not provide adequate adhesive contact to resist water pressure from ice dams or ponding, allowing water to penetrate between the sheets and reach the sheathing below.

75. A — Blind nailing through the tongue of each tongue-and-groove board produces the cleanest finished appearance because the fasteners are completely concealed by the groove of the next board. No nail heads, putty, or touch-up paint are visible on the finished ceiling surface. This is the standard method for exposed wood ceilings on porches and covered entries.

76. C — The vinyl mounting block provides a flat, rigid, and weathertight surface for mounting the light fixture while allowing the vinyl siding behind it to expand and contract freely. If the fixture were mounted directly to the siding, the siding movement would stress the fixture mount and the nailing would pin the siding panel.

77. B — Ceiling strapping installed perpendicular to the trusses and shimmed at the low spots creates a flat nailing plane that compensates for the unevenness of the truss bottom chords. The drywall is screwed to the flat strapping rather than to the uneven trusses, producing a smooth, level ceiling surface.

78. C — A reducer strip transitions from the flooring thickness down to the hearth level, covering the expansion gap between the flooring edge and the hearth stone. The reducer is fastened to the subfloor (not the flooring) and provides a smooth, safe transition that eliminates the tripping hazard of an exposed edge.

79. A — The short point of the mitre is the inside dimension — the distance between the reveal marks on the jamb. When the mitre is cut, the additional length needed to reach the outside edge of the casing profile is automatically created by the 45-degree angle. Measuring at the short point produces the exact inside dimension; the mitre adds the rest.

80. D — A sagging head jamb allows the track-mounted door panels to move toward the centre of the opening under gravity. This creates visible vertical movement (rattling) as the doors shift within the track. The doors may also not close evenly or align properly at the centre because the sagging track creates an uneven travel path.

81. D — Below the landing: 8 risers but only 7 treads because the landing surface serves as the 8th walking surface. Above the landing: 7 risers but only 6 treads because the upper floor serves as the 7th walking surface. Total treads = 7 + 6 = 13, and the landing serves as a shared walking surface between the two flights.

82. A — The most direct solution is to carefully plane or sand the protruding drywall edge down flush with the jamb surface using a hand plane, sanding block, or surform rasp. This eliminates the raised edge and allows the casing to sit flat against both the jamb reveal and the wall surface without shimming or additional buildup.

83. A — A filler strip is custom-scribed to match the wall contour and installed between the cabinet and the out-of-square wall. The filler closes the gap while allowing the cabinets to remain square and aligned with each other. Scribing means marking the wall's irregular profile onto the filler strip and trimming it to fit for a tight, gap-free appearance.

84. C — A T-molding expansion joint breaks the 12-metre dimension into two shorter runs, each within the manufacturer's maximum continuous run specification. The T-molding covers the expansion gap

between the two sections and is fastened to the subfloor so both flooring sections can expand independently beneath the strip.

85. D — A minimum clearance of 40 to 50 mm between the handrail and the wall surface allows the user to fully wrap their fingers around the handrail for a secure grip. Insufficient clearance prevents the hand from getting behind the rail, making it impossible to grip effectively — particularly critical for users with reduced mobility or during emergency egress.

86. B — A fire-rated door in a fire separation must have a self-closing device — either a door closer (hydraulic or pneumatic arm) or spring-loaded hinges — that automatically returns the door to the closed position after every opening. An open fire-rated door provides zero fire resistance, defeating the purpose of the fire separation.

87. A — Outside corners in shoe moulding (and all profiled trim) use a mitred joint — both pieces cut at 45 degrees with the mitre faces meeting at the corner. The joint is glued and pinned with a brad nail to prevent the mitre from opening as the wood expands and contracts. Coped joints are used only at inside corners.

88. C — The best visual result is achieved by centering the casing visually on the window rather than on the jamb. This means adjusting the reveal on each side so the casings appear symmetrically placed around the glass. The eye perceives the relationship between the casing and the glass, not between the casing and the hidden jamb edge.

89. B — Winder tread depth is measured along the walkline — the centreline of the stairway width, which represents the typical path of travel on the curved treads. This measurement must meet the minimum tread depth specified by the Building Code. The narrow end of the winder may be less than the minimum, but the walkline dimension must comply.

90. A — A 25 mm gap — double the standard 12 mm — indicates that the door is positioned too high relative to the finished floor. The most common cause is that the rough opening was framed too tall and the head jamb was shimmed upward to fill the excess space, raising the entire door unit above its intended position in the wall.

91. C — The wet area behind a bathtub requires cement backer board (for tile substrate durability) and a waterproofing membrane (to prevent water from reaching the framing). Standard drywall and moisture-

resistant drywall are not adequate substrates for tile in sustained wet areas. The proper assembly prevents the moisture damage that led to the deterioration the carpenter discovered.

92. B — Electrical work — including extending circuits, adding outlets, and any modification to the electrical system — must be performed by a licensed electrician or under an electrical permit with proper inspection in most Canadian jurisdictions. A carpenter's trade certificate does not authorize electrical work, and improper wiring creates fire and electrocution hazards.

93. C — While the joists have been in place for years without visible failure, the renovation triggers a review of the existing conditions. The 200 mm over-span means the joists do not meet the current code for the required loading, and the renovation provides the opportunity to correct this deficiency. Adding a mid-span beam or sistering the joists brings the floor into compliance.

94. A — Asbestos-containing materials must be removed by workers who have completed specific asbestos abatement training and hold the required certification under provincial OHS regulations. A general carpenter's trade certificate does not include asbestos abatement authorization. Improper removal releases asbestos fibres that cause fatal diseases in anyone who inhales them.

95. C — Different footing depths at the junction between old and new foundations create a discontinuity that allows differential settlement (one footing settles more than the other) and differential frost heave (one footing is above the frost line while the other is below). These differential movements crack the foundation and the building structure at the connection.

96. B — In a beam or joist under bending load, the bottom edge is in the tension zone and the top edge is in the compression zone. A notch in the bottom edge at mid-span — where bending stress is maximum — removes material from the most highly stressed location, dramatically reducing the member's capacity and creating a concentration point where failure initiates.

97. D — Insulation baffles (ventilation chutes) are installed between each rafter pair at the eaves before insulation is blown in. The baffles maintain a clear air channel from the soffit vents upward into the attic space, preventing the blown-in insulation from filling the eave area and blocking the ventilation intake. Without baffles, the soffit vents become useless.

98. A — Converting a garage to habitable space triggers all Building Code requirements for a habitable room: minimum ceiling height, natural light (window area as a percentage of floor area), ventilation,

insulation to current standards, heating, egress, electrical to habitable room standards, and fire separation from adjacent structures. A building permit is required.

99. C — Studs that are stained from past moisture exposure but pass the structural probe test (an awl does not easily penetrate the wood) are structurally sound. The staining indicates that moisture was present at some point but the wood fibres have not decayed. The studs can remain in place provided the moisture source has been identified and eliminated.

100. B — The building inspector needs the structural engineer's sealed drawings to verify that the beam size, post sizes, connection details, footing sizes, and load calculations match what was actually built. The sealed drawings are the engineer's certification that the design is structurally adequate. Without these drawings, the inspector cannot approve the structural modification.