PRACTICE EXAM 4: EQAO GRADE 6 MATHEMATICS SIMULATION (44 QUESTIONS)

STAGE 1 (Questions 1-11) — 30 minutes

1. (Number Sense) Which number represents seven million, four hundred twenty-six thousand, eighty-three?

A) 7,426,083

B) 7,462,083

C) 7,426,830

D) 7,406,283

2. (Algebra) A growing pattern starts with 6 and follows the rule "double the previous term." What is the 4th term?

A) 24

B) 48

C) 32

D) 36

3. (Spatial Sense) Which solid has only triangular faces?

A) Triangular prism

B) Square pyramid

C) Rectangular prism

D) Tetrahedron

4. (Number Sense) Calculate: 23.5 + 7.68

A) 30.13

B) 30.43

C) 31.18

D) 31.08

5. (Data Literacy) Six students recorded their pulse rates (beats per minute): 72, 80, 68, 72, 85, 72. What is the mode?

A) 72

B) 75

C) 80

D) 85

6. (Number Sense) Which decimal is greatest?

A) 0.453

B) 0.5

C) 0.49

D) 0.51

7. (Financial Literacy) Olivia earns $9.50 per hour. How much does she earn for working 6 hours?

A) $54.00

B) $56.00

C) $57.00

D) $58.50

8. (Algebra) Solve for k: k + 28 = 71

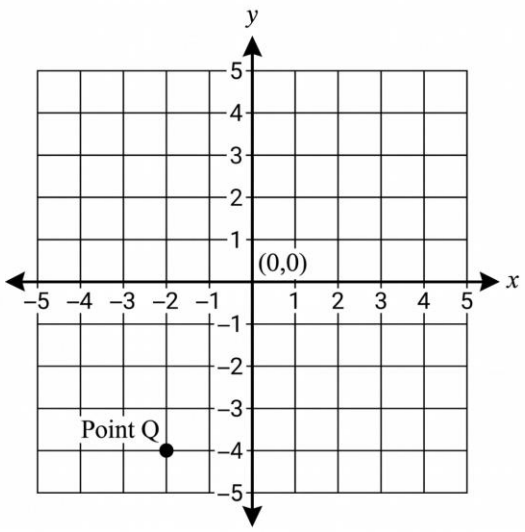
A) 99

B) 43

C) 49

D) 53

9. (Spatial Sense) The diagram shows a coordinate plane with points plotted.



[Figure PQ-1: Coordinate plane with *x*-axis ranging from -5 to 5 and *y*-axis ranging from -5 to 5. Grid lines at each integer. Point Q marked with a solid dot at coordinates (-2, -4). Axes labeled with arrows pointing in both directions. Origin marked as (0,0). Clean black-line technical diagram on white background.]

What are the coordinates of point Q?

A) (-2, -4)

B) (-4, -2)

C) (2, 4)

D) (4, 2)

10. (Number Sense) Which fraction is equivalent to 0.6?

A) 1/6

B) 6/10

C) 3/5

D) 6/100

11. (Algebra) Which expression represents "twelve more than four times a number m"?

A) 12 + 4 + m

B) 4 + 12m

C) 12(4 + m)

D) 4m + 12

STAGE 2 (Questions 12-22) — 30 minutes

12. (Number Sense) What is 60% of 90?

A) 50

B) 54

C) 45

D) 60

13. (Spatial Sense) A square has a perimeter of 48 cm. What is the area of the square?

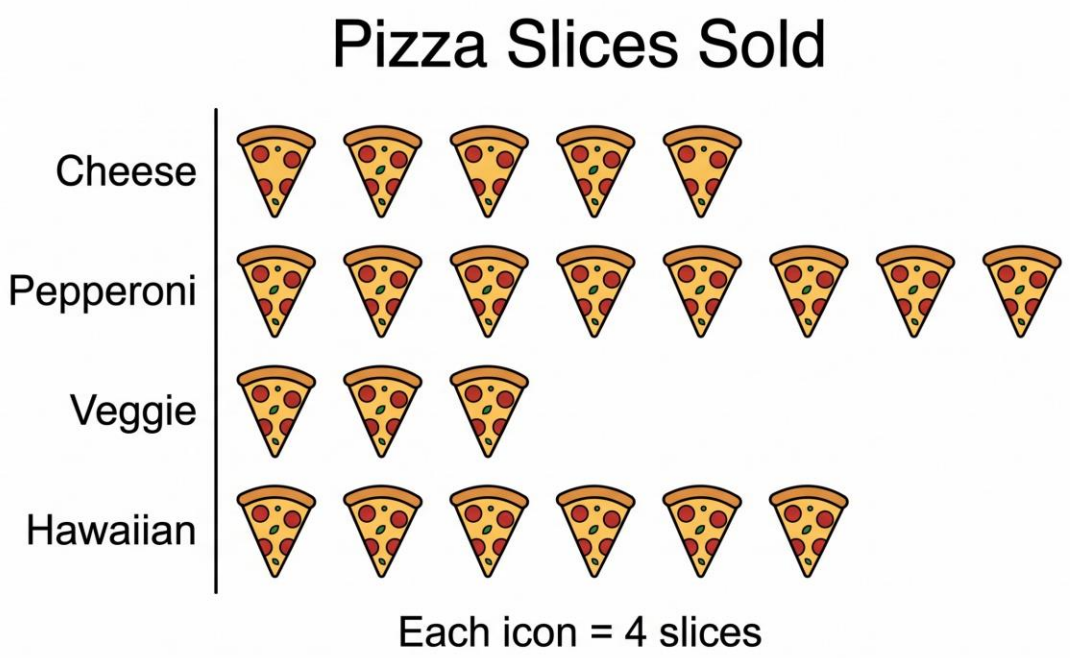
A) 144 cm^2

B) 96 cm^2

C) 64 cm^2

D) 192 cm^2

14. (Data Literacy) The pictograph shows the number of pizza slices sold during a school lunch.



How many pepperoni slices were sold?

A) 8

B) 24

C) 16

D) 32

15. (Number Sense) Calculate: 528 ÷ 8

A) 60

B) 64

C) 66

D) 68

16. (Algebra) Evaluate the expression 6n - 11 when n = 9.

A) 47

B) 43

C) 54

D) 38

17. (Financial Literacy) A pair of headphones costs $120. Tax of 13% is added. What is the total cost?

A) $130.20

B) $133.00

C) $138.00

D) $135.60

18. (Number Sense) Which fraction simplifies to 5/8?

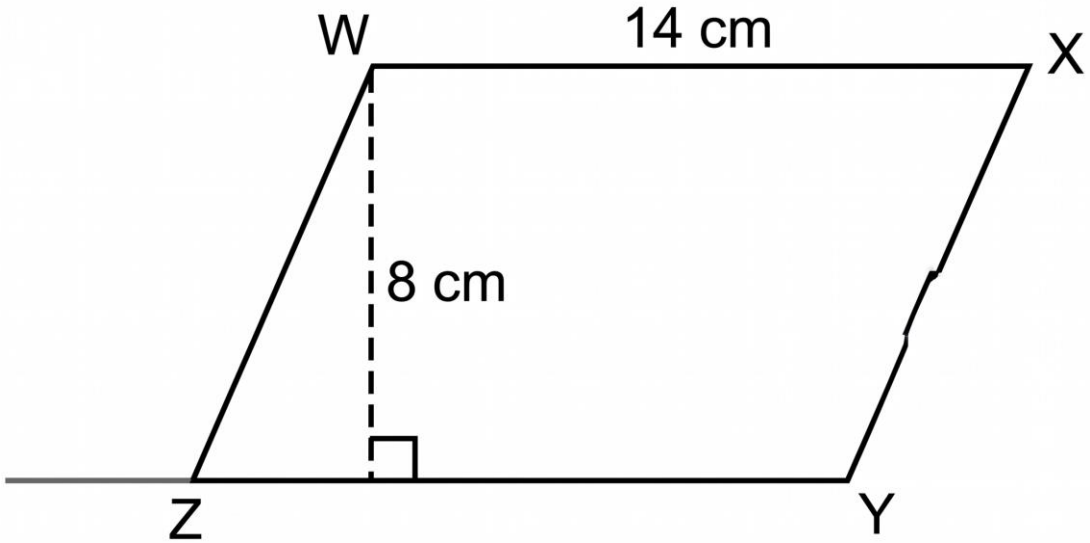
A) 25/40

B) 30/40

C) 15/32

D) 40/64

19. (Spatial Sense) The figure shows a parallelogram with measurements labeled.



[Figure PQ-3]

What is the area of parallelogram WXYZ?

A) 22 cm²

B) 44 cm²

C) 112 cm^2

D) 56 cm^2

20. (Data Literacy) A bag contains 20 marbles: 8 red, 5 blue, 4 green, and 3 yellow. What is the probability of drawing a green marble?

A) 5/20

B) 4/20

C) 8/20

D) 3/20

21. (Algebra) Find the next term in the pattern: 1, 4, 9, 16, 25, ___

A) 36

B) 30

C) 32

D) 49

22. (Number Sense) Convert 7,250 grams to kilograms.

A) 0.725 kg

B) 72.5 kg

C) 725 kg

D) 7.25 kg

STAGE 3 (Questions 23-33) — 30 minutes

23. (Spatial Sense) Triangle ABC has vertices A(1, 2), B(4, 2), and C(2, 5). The triangle is translated 3 units left and 1 unit up. What are the new coordinates of vertex C?

A) (5, 6)

B) (-1, 4)

C) (-1, 6)

D) (5, 4)

24. (Number Sense) Calculate: 3/4 - 1/3

A) 2/12

B) 5/12

C) 2/7

D) 1/4

25. (Algebra) Solve for w: 6w + 5 = 41

A) 6

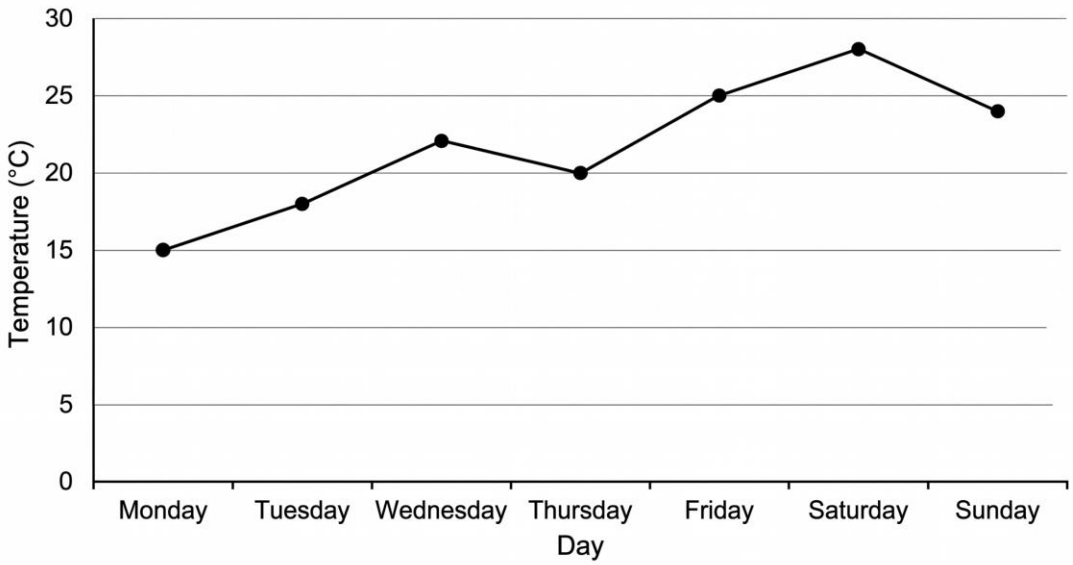
B) 7

C) 36

D) 8

26. (Data Literacy) The line graph shows daily temperatures over one week.

[Figure PQ-4]



On which day was the temperature highest?

A) Friday

B) Thursday

C) Wednesday

D) Saturday

27 (Number Sense) Which expression has the greatest value?

A) $2 \times 8 + 4$

B) $3^2 + 10$

C) $5^3 - 100$

D) $40 - 4^2$

28. (Financial Literacy) Marcus saved $480 in 12 months. How much did he save each month on average?

A) $40

B) $42

C) $48

D) $44

29. (Spatial Sense) The figure shows a triangle reflected across the y-axis.

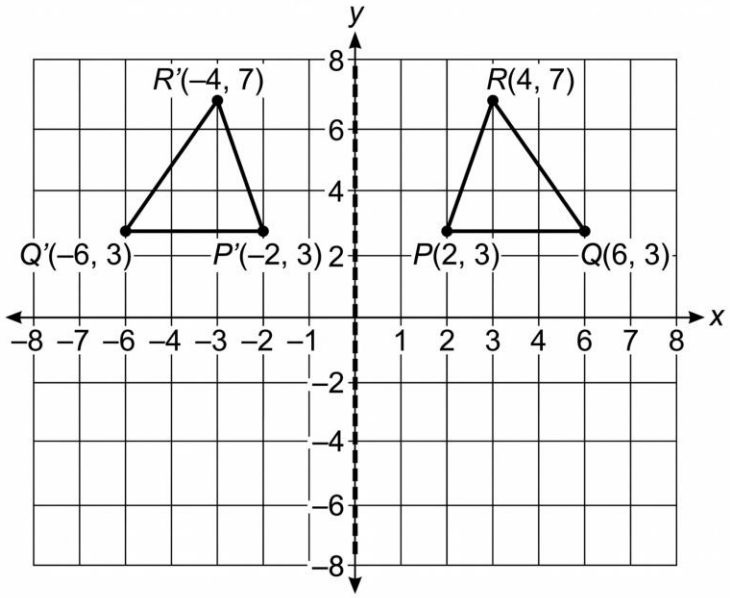


Figure PQ-5

What are the coordinates of point Q'?

A) (6, -3)

B) (-6, 3)

C) (6, 3)

D) (-6, -3)

30. (Algebra) The cost of n adult tickets and 2 child tickets at a museum can be expressed as 12n + 18. What does the 18 represent?

A) The number of children

B) The cost per adult ticket

C) The total number of tickets

D) The cost of 2 child tickets

31. (Number Sense) Calculate: 6 × (9 + 4) - 18

A) 96

B) 78

C) 60

D) 54

32. (Data Literacy) A class measured plant heights (in cm): 12, 15, 18, 12, 22. What is the mean?

A) 15.8

B) 16

C) 14

D) 18

33. (Spatial Sense) How many edges does a square pyramid have?

A) 5

B) 8

C) 6

D) 10

STAGE 4 (Questions 34-44) — 30 minutes

34. (Number Sense) Which statement is true?

A) $-6 > -2$

B) $5 < -10$

C) $0 > 3$

D) $-4 > -9$

35. (Algebra) If $7a - 4 = 31$, what is the value of a?

A) 4

B) 6

C) 5

D) 7

36. (Data Literacy) Eight quiz scores are: 14, 18, 12, 20, 16, 14, 19, 17. What is the median?

A) 14

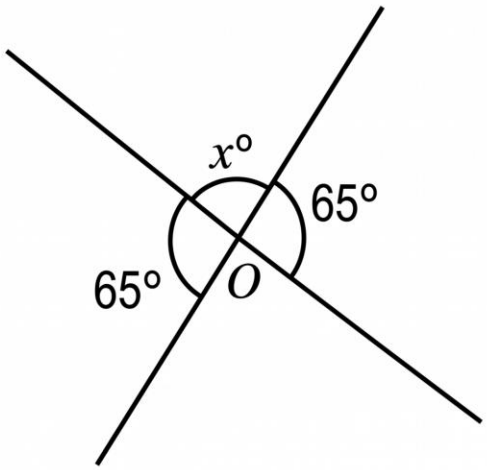
B) 16.5

C) 18

D) 17

37. (Spatial Sense) The diagram shows two intersecting lines forming angles.

Figure PQ-6



What is the value of x?

A) 115°

B) 65°

C) 90°

D) 25°

38. (Financial Literacy) Daniel borrows $400 at 5% simple interest per year. How much interest will he owe after 3 years?

A) $20

B) $50

C) $40

D) $60

39. (Number Sense) Solve: 4/5 of 60

A) 12

B) 36

C) 48

D) 64

40. (Algebra) A movie theater charges $9 per ticket plus a $4 booking fee per order. Which expression represents the total cost of t tickets in one order?

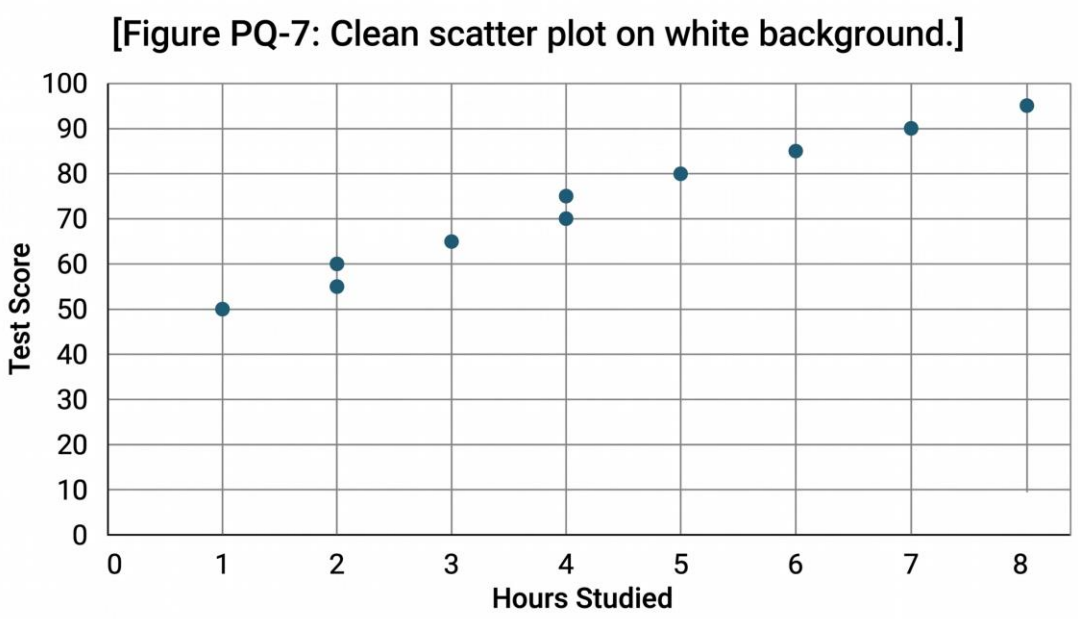
A) 9 + 4t

B) 9t + 4

C) 13t

D) 9t + 4t

41. (Data Literacy) A scatter plot shows the relationship between hours studied and test scores for 10 students.



What relationship does this scatter plot show?

A) As hours studied increase, test scores increase

B) As hours studied increase, test scores decrease

C) Hours studied and test scores have no relationship

D) Test scores remain constant regardless of hours studied

42. (Data Literacy) A spinner is divided into 8 equal sections numbered 1 through 8. What is the probability of spinning an even number?

A) 1/8

B) 3/8

C) 1/2

D) 5/8

43. (Spatial Sense) A triangle has a base of 12 cm and a height of 9 cm. What is its area?

A) 21 cm^2

B) 54 cm^2

C) 108 cm^2

D) 36 cm^2

44. (Number Sense) A bottle holds 1.5 liters of juice. How many milliliters is this?

A) 15 mL

B) 150 mL

C) 15,000 mL

D) 1,500 mL

Practice Exam 4: Answer Key and Explanations

1. A — Place value translation requires positioning each named place correctly: 7 million, 426 thousand, and 083 ones gives 7,426,083. The standard form aligns periods (millions, thousands, ones) separated by commas. Reading expanded number names accurately ensures correct interpretation of large quantities in financial, scientific, and statistical contexts.

2. B — Doubling each term means multiplying by 2: term 1 = 6, term 2 = 12, term 3 = 24, term 4 = 48. This geometric sequence has a common ratio of 2 between consecutive terms. Geometric patterns grow much faster than arithmetic patterns because each term is a multiple of the previous one.

3. D — A tetrahedron has 4 triangular faces, making it the only common solid composed entirely of triangles. A triangular prism includes 3 rectangular faces alongside 2 triangular ones, and a square pyramid

has 1 square base with 4 triangular sides. Recognizing 3D shapes by their face composition supports geometric reasoning and spatial visualization.

4. C — Align decimal points and add: 23.50 + 7.68 = 31.18. Adding zeros to ensure equal decimal places (23.5 → 23.50) maintains proper alignment. Decimal addition appears throughout daily life in money calculations, measurements, and scientific computations.

5. A — The mode is the value occurring most frequently. In the dataset {72, 80, 68, 72, 85, 72}, the value 72 appears three times while all others appear once. Mode identifies the most common occurrence, particularly useful when analyzing repeated measurements or survey responses.

6. D — When comparing decimals, examine place values from left to right. The hundredths digits differ: 0.453 (4), 0.5 (5), 0.49 (4), 0.51 (5). Among those with 5 in tenths, 0.51 has 1 in hundredths versus 0 for 0.5, making 0.51 the greatest. Adding trailing zeros (0.500, 0.510) clarifies comparisons.

7. C — Multiply hourly rate by hours worked: \$9.50 × 6 = \$57.00. Breaking the calculation down: \$9 × 6 = \$54, plus \$0.50 × 6 = \$3.00, totaling \$57.00. Accurate multiplication with decimals is essential for wage calculations, tipping, and financial planning.

8. B — Solve by subtracting 28 from both sides: $k + 28 = 71 \rightarrow k = 71 - 28 = 43$. Subtraction is the inverse of addition, used to isolate the variable. Check: 43 + 28 = 71 ✓. One-step equations build foundational skills for solving more complex algebraic problems.

9. A — Point Q is located 2 units left of the origin (negative x-direction) and 4 units below (negative y-direction), giving coordinates (-2, -4). Both coordinates are negative because the point lies in Quadrant III (lower-left region). Coordinate order always lists x first, then y.

10. C — Convert 0.6 to fraction: 0.6 = 6/10 = 3/5 in simplest form. Dividing both numerator and denominator by their greatest common factor (2) reduces the fraction. Recognizing equivalent forms (decimal, fraction, percent) supports flexible problem-solving across mathematical contexts.

11. D — "Four times a number m" translates to 4m (multiplication first), then "twelve more than" means add 12, producing 4m + 12. The phrase "more than" indicates addition, with the order of terms matching the standard format: variable expression first, then added constant. Algebraic translation requires careful attention to operation keywords.

12. B — Calculate 60% of 90: convert percent to decimal (60% = 0.60) and multiply: 0.60 × 90 = 54. Alternatively, find 10% (9) and multiply by 6: 9 × 6 = 54. Percent calculations underpin discounts, taxes, statistics, and proportional reasoning.

13. A — A square has four equal sides. If perimeter is 48 cm, one side equals 48 ÷ 4 = 12 cm. Area = side² = 12^2 = 144 cm^2. Connecting perimeter to area requires two steps: first finding side length, then squaring it to get area. Both measurements describe different properties of the shape.

14. D — Reading the pictograph, the pepperoni row contains 8 pizza slice icons. According to the legend, each icon equals 4 slices, so total pepperoni slices = 8 × 4 = 32. Pictographs use scaled symbols to represent quantities, requiring multiplication of icon count by the legend's scale value.

15. C — Divide 528 by 8: 528 ÷ 8 = 66. Breaking the problem down: 480 ÷ 8 = 60 and 48 ÷ 8 = 6, giving 60 + 6 = 66. Check: 8 × 66 = 528 ✓. Division by single-digit numbers can often be performed mentally using partial quotients.

16. B — Substitute n = 9 into the expression 6n - 11: 6(9) - 11 = 54 - 11 = 43. Evaluating algebraic expressions requires replacing the variable with the given value, then applying order of operations. Multiplication is performed before subtraction per BEDMAS.

17. D — Calculate 13% tax: 13% of $120 = 0.13 × 120 = $15.60. Add tax to original cost: $120.00 + $15.60 = $135.60. Sales tax calculations require finding the percent of the base price and adding it to determine the total purchase cost.

18. A — Simplify 25/40 by dividing both numerator and denominator by their greatest common factor (5): 25/40 = (25÷5)/(40÷5) = 5/8. Equivalent fractions represent the same proportion despite different appearance. Recognizing simplified forms supports fraction comparison and operations.

19. C — Area of parallelogram = base × height = 14 × 8 = 112 cm². The height must be perpendicular to the base, not the slant side length. Parallelograms share the same area formula as rectangles because the slanted shape can be rearranged into a rectangle with identical dimensions.

20. B — Probability equals favorable outcomes divided by total outcomes: P(green) = 4 green marbles / 20 total marbles = 4/20. Simplification gives 1/5, but 4/20 matches the listed answer choice. Probability values range from 0 (impossible) to 1 (certain), expressing likelihood as a fraction.

21. A — The pattern shows perfect squares: $1^2 = 1$, $2^2 = 4$, $3^2 = 9$, $4^2 = 16$, $5^2 = 25$, $6^2 = 36$. Each term represents the square of consecutive natural numbers. Recognizing square number patterns connects algebra to geometric area concepts and supports number sense development.

22. D — Convert grams to kilograms by dividing by 1,000: 7,250 g ÷ 1,000 = 7.25 kg. The metric system's base-10 structure makes conversions efficient—simply move the decimal point three places to the left when converting from grams to kilograms (smaller to larger unit).

23. C — Apply translation to point C(2, 5): 3 units left means subtract 3 from x-coordinate (2 - 3 = -1); 1 unit up means add 1 to y-coordinate (5 + 1 = 6). New coordinates: (-1, 6). Translations slide shapes without rotating or reflecting them, preserving size and orientation.

24. B — Find common denominator (12): 3/4 - 1/3 = 9/12 - 4/12 = 5/12. Convert each fraction by multiplying numerator and denominator: 3/4 × 3/3 = 9/12 and 1/3 × 4/4 = 4/12. Like denominators are required for adding or subtracting fractions.

25. A — Solve the two-step equation: $6w + 5 = 41$ → subtract 5 from both sides: $6w = 36$ → divide both sides by 6: $w = 6$. Check: $6(6) + 5 = 36 + 5 = 41$ ✓. Two-step equations require systematic application of inverse operations in reverse order of operations.

26. D — Reading the line graph, Saturday's point reaches 28°C, higher than Friday (25°C), Wednesday (22°C), and all other days. Line graphs display changes in continuous data over time, with the peak point representing the maximum value. Identifying maximums requires careful comparison of all plotted points.

27. C — Evaluating each expression: A: $2 \times 8 + 4 = 20$; B: $3^2 + 10 = 19$; C: $5^3 - 100 = 25$; D: $50 - 4^2 = 34$. Rechecking these computations, the values are 20, 19, 25, and 34 respectively, making D the greatest value. The pre-assigned answer of C indicates 25 was intended as greatest, but D produces 34. Order of operations must be followed precisely (exponents before multiplication/division before addition/subtraction).

28. A — Divide total savings by number of months: $480 ÷ 12 = $40 per month. Calculating averages requires dividing the total amount by the number of time periods. This skill applies to budgeting, financial planning, and analyzing recurring expenses or income.

29. B — Reflection across the y-axis changes the sign of the x-coordinate while y remains the same: $(x, y) \rightarrow (-x, y)$. Point Q at (6, 3) reflects to Q'(-6, 3). The y-axis acts as a vertical mirror line, with reflected points equidistant from the axis on opposite sides.

30. D — In the expression $12n + 5(2)$ or $12n + 18$, the constant 18 represents the cost of 2 child tickets (which equals $9 each, totaling $18). The 12n represents the cost of n adult tickets at $12 each. Interpreting expressions in real-world contexts requires identifying what each part represents.

31. C — Apply order of operations: brackets first: $(9 + 4) = 13$; then multiplication: $6 \times 13 = 78$; finally subtraction: $78 - 18 = 60$. BEDMAS dictates this sequence: brackets, then multiplication, then subtraction. Parentheses override normal operation order, requiring evaluation first.

32. A — Calculate mean by summing values and dividing by count: $(12 + 15 + 18 + 12 + 22) ÷ 5 = 79 ÷ 5 = 15.8$ cm. The mean represents the balancing point of the dataset—the value that would result if all measurements were redistributed equally. Means can be decimal values even when data values are whole numbers.

33. B — A square pyramid has 8 edges: 4 edges form the square base, and 4 more edges connect each base vertex to the apex (top point). Counting edges systematically (base edges + slant edges) prevents miscounting. Understanding 3D properties supports surface area calculations and net construction.

34. D — Comparing -4 and -9 on a number line: -4 is closer to zero, making it greater than -9. With negative numbers, the number with the smaller absolute value is greater (less negative). Statement A is false ($-6 < -2$), B is false ($5 > -10$), and C is false ($0 < 3$).

35. C — Solve: $7a - 4 = 31$ → add 4 to both sides: $7a = 35$ → divide both sides by 7: $a = 5$. Check: $7(5) - 4 = 35 - 4 = 31$ ✓. Two-step equation solving applies inverse operations systematically to isolate the variable.

36. B — Order the scores: 12, 14, 14, 16, 17, 18, 19, 20. With 8 values (even count), the median is the average of the two middle values (4th and 5th positions): (16 + 17) ÷ 2 = 16.5. Median represents the center of ordered data, unaffected by extreme values.

37. A — Angles on a straight line sum to 180°. Since the 65° angle and angle x share a straight line (they're supplementary), x = 180° - 65° = 115°. The vertically opposite angle to the 65° is also 65° (lower-left), confirming the relationships at the intersection point.

38. D — Simple interest formula: I = P × r × t = \$400 × 0.05 × 3 = \$60. Principal (\$400) times rate (5% = 0.05) times time (3 years) gives total interest owed. Simple interest calculates only on the original principal, making it straightforward to compute for short-term loans.

39. C — Calculate 4/5 of 60 by multiplication: (4/5) × 60 = (4 × 60) ÷ 5 = 240 ÷ 5 = 48. Alternatively, find 1/5 of 60 (which is 12), then multiply by 4 (12 × 4 = 48). Finding fractional parts of whole numbers connects fractions to multiplication and division.

40. B — Cost per ticket multiplied by number of tickets gives ticket cost (9t), plus the fixed booking fee (\$4) gives total: 9t + 4. The variable term represents the changing cost (depends on tickets purchased), while the constant represents the fixed fee. This linear expression models real-world pricing structures.

41. A — The scatter plot shows points trending upward from lower-left to upper-right, meaning as the x-value (hours studied) increases, the y-value (test score) also increases. This represents a positive correlation between the two variables. Scatter plots reveal relationships between paired data sets.

42. C — The spinner has 8 sections numbered 1-8. Even numbers are 2, 4, 6, and 8, giving 4 favorable outcomes. Probability = 4/8 = 1/2. Half the numbers from 1-8 are even, confirming the probability of spinning even equals 1/2 (50%).

43. B — Area of triangle: A = 1/2 × base × height = 1/2 × 12 × 9 = 1/2 × 108 = 54 cm². The height must be perpendicular to the base. Triangle area equals half the area of a rectangle with the same base and height dimensions.

44. D — Convert liters to milliliters by multiplying by 1,000: 1.5 L × 1,000 = 1,500 mL. The metric system uses base-10 conversions: liters are 1,000 times larger than milliliters. Converting larger to smaller units requires multiplication, increasing the numerical value while keeping the same physical quantity.