SECTION A4 — SUSPENSION AND STEERING PRACTICE EXAMS

The seven full-length simulation exams in Section A4 cover the ASE A4 Suspension and Steering certification. Each exam contains forty multiple-choice questions delivered in the exact format the live A4 test uses, with the same domain weighting that ASE specifies for the current version of the test:

- **Steering Systems Diagnosis and Repair** — 12 questions per exam (30 percent)
- **Suspension Systems Diagnosis and Repair** — 11 questions per exam (27.5 percent)
- **Wheel Alignment Diagnosis, Adjustment, and Repair** — 12 questions per exam (30 percent)
- **Wheel and Tire Diagnosis and Repair** — 5 questions per exam (12.5 percent)

A4 stands apart from other ASE A-series tests because it has three nearly equal-weight domains (steering, suspension, and alignment each at roughly 30 percent) plus a smaller wheel and tire domain. The technician who passes A4 must be equally skilled in three substantial areas of expertise, with no single domain dominating the test the way engine repair dominates A1 or AWD dominates A3. This balance reflects the reality of suspension and steering work: a single chassis complaint frequently involves all three areas. A pull while braking can originate in steering geometry, suspension wear, alignment angles, or tire condition, and the A4-certified technician must be able to diagnose across all four possibilities.

The defining characteristic of the A4 exam is that **alignment angle interpretation is the most heavily tested skill**. Twelve questions per exam — thirty percent of the test — directly involve alignment angles (camber, caster, toe, thrust angle, SAI, included angle, scrub radius, and turning radius). The technician must understand what each angle does, how each angle affects vehicle behavior, what symptoms each angle produces when out of specification, and how to adjust each angle on common suspension types. The candidate who masters alignment angles has mastered the core of the A4 test.

A second defining characteristic is that **electronic power steering (EPS) and electronically assisted steering systems** have become standard test content. Questions on traditional hydraulic power steering still appear, but EPS-specific content — torque sensors, motor diagnosis, steering angle sensor calibration, lane-keeping integration, scan tool data interpretation — represents an increasing share of the steering domain. The technician who understands only hydraulic systems will struggle with modern A4 content; the technician who understands both hydraulic and electronic systems is well prepared.

A third defining characteristic is that **suspension noise diagnosis** is a significant subset of the suspension domain. Suspension complaints often present as noise — clunks, knocks, squeaks, rattles — and the

technician must be able to identify the specific worn component based on the noise characteristics, operating conditions, and what produces or eliminates the noise. Strut mounts, ball joints, sway bar end links, control arm bushings, and shock absorbers each have characteristic failure patterns.

A fourth defining characteristic is that **TPMS (tire pressure monitoring system)** has become a routine part of wheel and tire service. The five questions per exam in the wheel and tire domain frequently include TPMS diagnosis, sensor relearning procedures, and the integration between TPMS and the vehicle's electronic systems. The technician who treats wheel and tire work as purely mechanical will miss the electronic content that A4 increasingly tests.

The exams in this section progress from foundational diagnostic skills in early exams to integrated multi-domain scenarios in later exams. Early exams focus on individual systems — straight steering complaints, straight suspension complaints, straight alignment problems. Middle exams introduce comparative diagnosis where two domains must be evaluated together. Later exams concentrate on complex scenarios where alignment, steering, suspension, and tire condition all interact and the technician must determine the root cause systematically.

Total practice questions in Section A4: **280 questions** across 7 simulation exams.

Set a timer for sixty minutes when taking each exam, work through the questions without referencing notes, and resist the temptation to peek at the answer key until you have submitted your final answer for every question. Treat each simulation as if it were the live A4 test waiting for you at a Prometric testing center. Pay particular attention to alignment angle questions and to the EPS-specific content — these are the areas where strong A4 candidates separate themselves from those who confuse similar angle effects or who lack depth in modern electronically assisted steering systems.

PRACTICE EXAM 1: A4 SIMULATION — SUSPENSION AND STEERING

1. A vehicle is brought in with a complaint that the steering wheel is off-center when driving straight. The wheel sits approximately 15 degrees to the right of center during straight-line driving. The MOST likely cause is:

A. Improper toe adjustment producing an off-center wheel

B. A worn steering pump pulley

C. A failed power steering pump

D. Air in the power steering system

2. A vehicle exhibits a pull to the right during straight-line driving on a level road. Tire pressures are equal and tires are in good condition. The MOST likely cause is:

A. A failed power steering pump

B. A worn power steering pump bearing

C. A camber or caster difference between the front wheels

D. Air in the power steering hydraulic system

3. The proper procedure for diagnosing a steering complaint is to:

A. Replace the steering rack as the most direct repair

B. Verify the concern, inspect tires, inspect components, and verify alignment

C. Replace the power steering pump as a precaution

D. Replace the steering wheel as a first step

4. A vehicle equipped with hydraulic power steering exhibits a complaint of heavy steering effort. Power steering fluid level is correct. The MOST likely cause is:

A. A worn power steering pulley

B. A worn input shaft bearing

C. Air in the clutch hydraulic system

D. A failed pump, restricted line, or failed gear seal

5. The proper purpose of the steering rack inner tie rod ends is to:

A. Generate hydraulic pressure for the steering system

B. Drive the steering pump during operation

C. Filter contaminants from the power steering fluid

D. Connect the rack to the outer tie rods for steering motion transfer

6. A vehicle equipped with electric power steering (EPS) has been brought in with a complaint of complete loss of power assist. The MOST likely cause is:

A. A worn steering pulley

B. A failed motor, module, motor circuit, or torque sensor

C. Air in the clutch hydraulic system

D. A worn input shaft bearing

7. The proper procedure for diagnosing an EPS system fault is to:

A. Verify concern, retrieve DTCs, monitor scan data, and verify components

B. Replace the EPS module as the most direct repair

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as required

8. A vehicle's tie rod end is suspected of being worn. The proper inspection method is to:

A. Apply compressed air to the tie rod end

B. Replace the tie rod end as a precaution

C. Raise the wheel, manipulate the tie rod, observe play, and compare to specification

D. Visually inspect for visible damage only

9. The proper purpose of the steering knuckle is to:

A. Generate hydraulic pressure for the steering system

B. Drive the steering rack during operation

C. Filter contaminants from the power steering fluid

D. Provide the mounting points for hub, brakes, and steering linkage while pivoting for steering

10. A vehicle has been brought in with a complaint of clunking noise from the front suspension when driving over rough pavement. The MOST likely cause is:

A. A failed power steering pump

B. A worn ball joint, strut mount, end link, or control arm bushing

C. A worn steering pump pulley

D. Air in the clutch hydraulic system

11. The proper procedure for inspecting a ball joint is to:

A. Unload the joint, manipulate with proper tooling, observe play, and compare to specification

B. Replace the ball joint as a precaution

C. Apply compressed air to the ball joint

D. Visually inspect for visible damage only

12. A vehicle equipped with MacPherson struts exhibits a complaint of squeaking noise during steering input. The MOST likely cause is:

A. A failed power steering pump

B. A worn steering pulley

C. Air in the clutch hydraulic system

D. A worn or damaged strut bearing or strut mount

13. The proper purpose of a sway bar (anti-roll bar) is to:

A. Generate hydraulic pressure for the suspension

B. Drive the suspension during operation

C. Reduce body roll during cornering by linking left and right suspension

D. Filter contaminants from the suspension components

14. A vehicle exhibits a complaint of bouncing or excessive movement after going over bumps. The MOST likely cause is:

A. A failed power steering pump

B. Worn shock absorbers or struts that cannot dampen suspension motion

C. A worn steering pulley

D. Air in the clutch hydraulic system

15. The proper procedure for verifying shock absorber condition is to:

A. Bounce-test each corner, observe damping within 1-2 oscillations, and inspect for leaks

B. Replace the shock as a precaution

C. Apply compressed air to the shock

D. Visually inspect for visible damage only

16. A vehicle's wheel alignment camber measurement reads negative 1.5 degrees on the left front and positive 0.2 degrees on the right front. The manufacturer's specification is 0.0 degrees ± 0.5 degree. The MOST likely effect on vehicle behavior is:

A. A failed power steering pump

B. A worn steering pulley

C. Air in the clutch hydraulic system

D. The vehicle will pull to the right (toward the more positive camber)

17. The proper purpose of camber adjustment in vehicle alignment is to:

A. Generate hydraulic pressure for the steering system

B. Drive the steering pump during operation

C. Set vertical wheel position for proper tire wear and stability

D. Filter contaminants from the suspension fluid

18. A vehicle's wheel alignment caster measurement reads positive 2.0 degrees on the left front and positive 4.5 degrees on the right front. The manufacturer's specification is positive 3.5 degrees ± 0.5 degree. The MOST likely effect on vehicle behavior is:

A. The vehicle will pull to the left (toward less positive caster)

B. A failed power steering pump

C. A worn steering pulley

D. Air in the clutch hydraulic system

19. The proper purpose of caster adjustment in vehicle alignment is to:

A. Generate hydraulic pressure for the steering system

B. Drive the steering pump during operation

C. Filter contaminants from the suspension fluid

D. Tilt the steering axis for stability and steering wheel return

20. A vehicle's wheel alignment toe measurement reads 0.25 inch toe-in on the front axle. The manufacturer's specification is 0.05 inch toe-in ± 0.05 inch. The MOST likely effect on tire wear is:

A. A failed power steering pump

B. A worn steering pulley

C. Excessive outer-edge wear on both front tires

D. Air in the clutch hydraulic system

21. The proper procedure for adjusting front toe on a vehicle equipped with adjustable tie rod ends is to:

A. Apply compressed air to the tie rods

B. Loosen jam nuts, rotate sleeves, retorque, and verify the measurement

C. Replace the tie rod ends as a precaution

D. Visually estimate the adjustment

22. A vehicle has been brought in with a complaint of off-center steering wheel after recent alignment service. Toe is within specification but the steering wheel is off-center. The MOST likely cause is:

A. A failed power steering pump

B. A worn steering pulley

C. Air in the clutch hydraulic system

D. Improper steering wheel centering with unequal toe distribution

23. The proper purpose of thrust angle in vehicle alignment is to:

A. Generate hydraulic pressure for the steering system

B. Drive the steering pump during operation

C. Indicate the rear axle direction relative to the geometric centerline

D. Filter contaminants from the suspension fluid

24. A vehicle's rear thrust angle measurement reads 0.3 degrees. The manufacturer's specification is 0.0 degrees ± 0.1 degree. The MOST likely effect on vehicle behavior is:

A. The vehicle will dog-track during straight-line driving

B. A failed power steering pump

C. A worn steering pulley

D. Air in the clutch hydraulic system

25. The proper procedure for diagnosing a vehicle pull complaint is to:

A. Replace the steering rack as the most direct repair

B. Verify the pull, check tires, inspect components, and perform a four-wheel alignment

C. Replace the power steering pump as a precaution

D. Replace the transmission fluid as the only step

26. A vehicle has been brought in with a complaint of uneven tire wear. The technician finds the inside edge of the right front tire is significantly worn while the outside edge is in good condition. The MOST likely cause is:

A. A failed power steering pump

B. A worn steering pulley

C. Air in the clutch hydraulic system

D. Excessive negative camber or excessive toe-out on the right front

27. The proper procedure for diagnosing tire wear that does not match standard alignment patterns is to:

A. Replace the tires as the most direct repair

B. Replace the steering rack as a precaution

C. Inspect for worn components, perform alignment, and check tire history

D. Replace the transmission fluid as the only step

28. A vehicle equipped with TPMS (tire pressure monitoring system) has been brought in with a complaint that the TPMS warning light remains on after a tire was replaced. The MOST likely cause is:

A. A missing, unrelearned, or damaged TPMS sensor

B. A failed power steering pump

C. A worn steering pulley

D. Air in the clutch hydraulic system

29. The proper procedure for verifying TPMS sensor operation is to:

A. Apply compressed air to the sensor

B. Use a TPMS tool to verify communication and perform relearn procedure

C. Replace the sensor as a precaution

D. Visually inspect for visible damage only

30. A vehicle has been brought in with a complaint of vibration during braking that is felt through the steering wheel. The MOST likely cause is:

A. A failed power steering pump

B. A worn steering pulley

C. Warped rotors, worn brake components, or unbalanced front wheels

D. Air in the clutch hydraulic system

31. The proper procedure for diagnosing a steering wheel vibration during braking is to:

A. Inspect rotor runout, verify balance, inspect components, and check tires

B. Replace the steering rack as the most direct repair

C. Replace the power steering pump as a precaution

D. Replace the transmission fluid as the only step

32. A vehicle has been brought in with a complaint of steering wheel oscillation (shimmy) that occurs at specific speeds. The MOST likely cause is:

A. A failed power steering pump

B. A worn steering pulley

C. Air in the clutch hydraulic system

D. Wheel imbalance, worn components, or improper alignment

33. The proper purpose of steering axis inclination (SAI) is to:

A. Generate hydraulic pressure for the steering system

B. Provide the steering axis angle from vertical for stability and self-centering

C. Drive the steering pump during operation

D. Filter contaminants from the suspension fluid

34. A vehicle has been brought in with a complaint that the steering wheel does not return to center after a turn. Caster is within specification. The MOST likely cause is:

A. A failed power steering pump

B. A worn steering pulley

C. Worn or binding components, ball joints, or strut mounts

D. Air in the clutch hydraulic system

35. The proper procedure for verifying steering wheel return is to:

A. Road test through varied turns and observe return to center

B. Apply compressed air to the steering system

C. Replace the steering rack as a precaution

D. Replace the power steering pump as the most direct repair

36. A vehicle equipped with electronic power steering has been brought in with a complaint that the steering becomes heavy at low speeds and light at high speeds. The MOST likely cause is:

A. A failed power steering pump

B. A worn steering pulley

C. Air in the clutch hydraulic system

D. A failed VSS, steering angle sensor, or EPS module calibration fault

37. The proper purpose of an EPS torque sensor is to:

A. Generate hydraulic pressure for the steering system

B. Measure driver-applied steering torque to determine motor assist level

C. Drive the steering pump during operation

D. Filter contaminants from the steering fluid

38. A vehicle has been brought in with a complaint of pull to one side that occurs only during braking. Alignment is within specification. The MOST likely cause is:

A. A failed power steering pump

B. A worn steering pulley

C. A sticking caliper, worn brake component, or brake hose restriction

D. Air in the clutch hydraulic system

39. The proper procedure for diagnosing a brake-related pull is to:

A. Replace the brake components as the most direct repair

B. Inspect calipers, hoses, pads, rotors, and verify hydraulic operation

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

40. A vehicle has been brought in with a complaint of wandering at highway speeds. Tires are properly inflated and in good condition. The MOST likely cause is:

A. Worn components, improper caster, or worn ball joints allowing excessive movement

B. A failed power steering pump

C. A worn steering pulley

D. Air in the clutch hydraulic system

PRACTICE EXAM 1: A4 SIMULATION — ANSWER KEY, EXPLANATIONS, AND TASK REMEDIATION

---

1. A — Improper toe adjustment producing an off-center wheel. Front toe is set with the steering wheel locked at center; if toe is unequal between the left and right tie rods, the wheel ends up off-center even when toe is technically within specification. Centering the steering wheel and equalizing toe distribution corrects the off-center position. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

2. C — A camber or caster difference between the front wheels. With equal tire pressures and good tire condition, alignment angle differences become the most likely pull source. The vehicle pulls toward the side with more positive camber or less positive caster, since these geometry differences produce a net steering force. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

3. B — Verify the concern, inspect tires, inspect components, and verify alignment. Steering complaints require systematic diagnosis before any component replacement. Tire condition, component condition, and alignment all interact to produce steering symptoms; addressing only one rarely solves the actual cause. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

4. D — A failed pump, restricted line, or failed gear seal. Heavy steering effort with normal fluid level isolates the issue to a hydraulic pressure delivery problem. Pump failure, line restriction, or internal gear seal failure each prevent the system from delivering the assist pressure the steering gear needs. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

5. D — Connect the rack to the outer tie rods for steering motion transfer. The inner tie rod ends transmit the rack's lateral motion to the outer tie rod ends, which then transmit motion to the steering knuckles. The inner ends must accommodate suspension travel while maintaining the steering connection. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

6. B — A failed motor, module, motor circuit, or torque sensor. Complete loss of EPS assist isolates the issue to the assist-generating chain. The motor, module, motor circuit, or torque sensor (which

provides the input the module needs to command assist) are the most likely failure points. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

7. A — Verify concern, retrieve DTCs, monitor scan data, and verify components. EPS diagnosis requires scan tool integration since the system is electronically controlled. DTC retrieval, live data monitoring, and component verification together identify the specific fault in the system. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

8. C — Raise the wheel, manipulate the tie rod, observe play, and compare to specification. Tie rod end inspection requires unloading the joint and physically manipulating it to detect play. The amount of play must be compared to specification, since some movement is normal and only excessive play indicates failure. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

9. D — Provide the mounting points for hub, brakes, and steering linkage while pivoting for steering. The steering knuckle is the central component that holds the wheel hub, brake assembly, and steering linkage together while pivoting on its ball joints to allow steering motion. Failure of the knuckle or its mounting points affects all three connected systems. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

10. B — A worn ball joint, strut mount, end link, or control arm bushing. Front suspension clunking over rough pavement is the diagnostic signature of slack in the suspension joints. Each of these components allows movement when worn, producing the audible clunk during impact loads. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

11. A — Unload the joint, manipulate with proper tooling, observe play, and compare to specification. Ball joint inspection requires unloading the joint (so the joint's preload doesn't mask wear), manipulating with proper tooling, and comparing observed play to specification. This is the only method that reliably detects ball joint wear. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

12. D — A worn or damaged strut bearing or strut mount. On MacPherson struts, the strut rotates within the strut bearing during steering input. Worn or damaged strut bearings produce the squeaking noise specifically during steering motion, when the bearing is being stressed. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

13. C — Reduce body roll during cornering by linking left and right suspension. The sway bar transfers force between the left and right side of the suspension during cornering, resisting the body's tendency to roll. This improves cornering stability and handling without affecting straight-line ride quality. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

14. B — Worn shock absorbers or struts that cannot dampen suspension motion. Excessive bouncing after bumps is the diagnostic signature of failed dampers. Without proper damping, the suspension oscillates multiple times after each bump rather than settling within one to two cycles. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

15. A — Bounce-test each corner, observe damping within 1-2 oscillations, and inspect for leaks. Shock condition verification combines the bounce test (operational damping check) with leak inspection (physical condition check). Both methods together identify the most common failure modes. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

16. D — The vehicle will pull to the right (toward the more positive camber). Camber pulls the vehicle toward the side with more positive (or less negative) camber. The 1.7-degree split between the two front wheels produces a strong pull to the right, since the right wheel has more positive camber than the left. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

17. C — Set vertical wheel position for proper tire wear and stability. Camber controls the wheel's vertical tilt (inward or outward at the top). Proper camber distributes tire wear across the tread and provides directional stability; improper camber produces edge wear and pull. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

18. A — The vehicle will pull to the left (toward less positive caster). Caster pulls the vehicle toward the side with less positive caster. The 2.5-degree caster split produces a strong pull to the left, since the left wheel has less positive caster than the right. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

19. D — Tilt the steering axis for stability and steering wheel return. Caster tilts the steering axis forward or backward when viewed from the side. Positive caster provides directional stability at speed and causes the steering wheel to return to center after a turn. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

20. C — Excessive outer-edge wear on both front tires. Excessive toe-in (0.25 inch when 0.05 inch is specified) drags both front tires inward against their direction of travel. The friction wears the outer edges of both tires symmetrically, producing the characteristic toe-in wear pattern. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

21. B — Loosen jam nuts, rotate sleeves, retorque, and verify the measurement. Toe adjustment uses the threaded tie rod sleeves between the inner and outer tie rod ends. Rotating the sleeve changes the effective length of the tie rod, adjusting toe; jam nuts must be retorqued and the final measurement verified. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

22. D — Improper steering wheel centering with unequal toe distribution. When toe is correct in total but the steering wheel is off-center, the toe adjustment was made without first centering the steering wheel. Equal toe distribution between the two tie rods is required for the wheel to be centered. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

23. C — Indicate the rear axle direction relative to the geometric centerline. Thrust angle is the difference between the rear axle's direction of travel and the vehicle's geometric centerline. A non-zero thrust angle means the rear axle is not aligned with the centerline, producing dog-tracking. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

24. A — The vehicle will dog-track during straight-line driving. A 0.3-degree thrust angle exceeds the 0.1-degree specification, meaning the rear axle is misaligned with the centerline. The rear of the vehicle tracks at an angle from the front, producing the characteristic dog-tracking appearance and a crooked steering wheel. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

25. B — Verify the pull, check tires, inspect components, and perform a four-wheel alignment. Pull diagnosis requires systematic investigation since pull can originate from tires, components, or alignment. Four-wheel alignment is essential because rear axle thrust angle can produce front-end pull symptoms. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

26. D — Excessive negative camber or excessive toe-out on the right front. Inside-edge tire wear is the diagnostic signature of either excessive negative camber (top of tire tilted inward) or excessive toe-out (front of tire angled outward). Both alignment conditions concentrate load on the inside edge. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

27. C — Inspect for worn components, perform alignment, and check tire history. Unusual tire wear patterns often indicate intermittent alignment angles caused by worn suspension components. Comprehensive inspection identifies wear sources, alignment confirms current angles, and tire history reveals contributing factors. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

28. A — A missing, unrelearned, or damaged TPMS sensor. A persistent TPMS warning after tire replacement indicates the sensor is not communicating with the vehicle. Missing sensor on the new tire, sensor not relearned to the vehicle, or damaged sensor are the three most common causes. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

29. B — Use a TPMS tool to verify communication and perform relearn procedure. TPMS sensor verification requires a TPMS tool to communicate with each sensor and verify proper operation. The relearn procedure registers the sensors with the vehicle's TPMS module per the manufacturer's procedure. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

30. C — Warped rotors, worn brake components, or unbalanced front wheels. Vibration through the steering wheel during braking is the diagnostic signature of brake-related or wheel-related issues that become apparent under braking loads. Each cause produces vibration that transfers through the steering linkage. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

31. A — Inspect rotor runout, verify balance, inspect components, and check tires. Steering wheel vibration during braking requires comprehensive diagnosis since multiple causes can produce the symptom. Rotor runout, wheel balance, suspension component condition, and tire condition each contribute potential causes. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

32. D — Wheel imbalance, worn components, or improper alignment. Speed-specific shimmy is the diagnostic signature of wheel balance issues, since imbalanced wheels produce vibration that resonates at specific speeds. Worn components and alignment issues can also produce shimmy at characteristic speeds. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

33. B — Provide the steering axis angle from vertical for stability and self-centering. SAI is the inward tilt of the steering axis when viewed from the front. This angle works with caster to provide directional stability and self-centering of the steering after a turn. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

34. C — Worn or binding components, ball joints, or strut mounts. Failure to return to center with caster within specification isolates the issue to mechanical binding in the steering system. Worn or binding ball joints, strut mounts, or other components prevent the steering from returning to center. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

35. A — Road test through varied turns and observe return to center. Steering wheel return verification requires road testing through varied turning conditions. Each turn allows observation of whether the steering returns smoothly to center, identifying any binding or hesitation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

36. D — A failed VSS, steering angle sensor, or EPS module calibration fault. EPS provides variable assist based on vehicle speed (more assist at low speed, less at high speed). A failed vehicle speed sensor, steering angle sensor, or module calibration fault disrupts the speed-sensitive assist calculation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

37. B — Measure driver-applied steering torque to determine motor assist level. The EPS torque sensor measures the torque the driver applies to the steering wheel. The EPS module uses this input, combined with vehicle speed, to determine the appropriate level of motor assist for current driving

conditions. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

38. C — A sticking caliper, worn brake component, or brake hose restriction. Pull during braking only, with alignment within specification, isolates the cause to the brake system on the side opposite the pull. Sticking caliper, worn brake component, or brake hose restriction reduce braking force on one side, producing the pull. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

39. B — Inspect calipers, hoses, pads, rotors, and verify hydraulic operation. Brake-related pull diagnosis requires comprehensive inspection of all brake components on both sides. Each component can contribute to uneven braking force, so all must be evaluated to identify the specific cause. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

40. A — Worn components, improper caster, or worn ball joints allowing excessive movement. Wandering at highway speeds is the diagnostic signature of insufficient directional stability. Worn components, insufficient positive caster, or worn ball joints allow excessive wheel movement that the system cannot self-correct at speed. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*