PRACTICE EXAM 4: A4 SIMULATION — SUSPENSION AND STEERING

1. A vehicle has been brought in with the following findings: complaint of pull to the right, right front camber at +1.0 degree, left front camber at -0.2 degree, and tire wear on the inside edge of the right front. The MOST appropriate action is:

A. Replace the right front tire as the most direct repair

B. Adjust both front camber values to specification, perform a four-wheel alignment, and verify proper pull resolution

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

2. The proper procedure for diagnosing a complaint that includes both pull and uneven tire wear is to:

A. Replace the alignment as the most direct repair

B. Replace the steering rack as a precaution

C. Replace the transmission fluid as the only step

D. Verify the customer concern, inspect components, perform a four-wheel alignment, and identify the relationship between the symptoms

3. A vehicle has been brought in with the following findings: complaint of clunking from the front suspension over bumps, worn ball joint visible during inspection, worn sway bar end link, and worn strut mount. The MOST appropriate action is:

A. Replace only the ball joint as the most direct repair

B. Replace only the sway bar end link as the most direct repair

C. Replace all worn components, perform an alignment, and verify the noise resolution

D. Replace the steering rack as a precaution

4. The proper procedure for verifying a complete suspension service has been completed correctly is to:

A. Verify all components are properly installed, perform an alignment, road test through varied conditions, and verify no noise or symptoms remain

B. Apply compressed air to the suspension

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

5. A vehicle has been brought in with the following findings: complaint of vibration at highway speeds, properly inflated tires, alignment within specification, and wheel balance verified. The MOST likely cause is:

A. A failed power steering pump

B. A worn power steering pulley

C. Air in the clutch hydraulic system

D. A defective tire (out-of-round, separated tread, or internal damage), or a defective wheel with excessive runout

6. The proper procedure for diagnosing vibration when alignment, balance, and components are within specification is to:

A. Replace the tires as a precaution

B. Inspect tires for visible damage, measure tire and wheel runout, inspect the wheel for damage, and consider replacement as appropriate

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

7. A vehicle has been brought in with the following findings: complaint of bouncing after bumps, worn shock absorbers (verified by bounce test), worn strut mounts, and tire cupping wear pattern. The MOST appropriate action is:

A. Replace only the shock absorbers as the most direct repair

B. Replace the steering rack as a precaution

C. Replace the transmission fluid as the only step

D. Replace all worn dampers and mounts, replace or rotate the cupped tires, and verify alignment

8. The proper procedure for verifying that suspension repair has resolved tire cupping is to:

A. Replace damaged dampers and mounts, replace or rotate affected tires, perform an alignment, and verify proper operation through a road test

B. Apply compressed air to the suspension

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

9. A vehicle has been brought in with the following findings: complaint of off-center steering wheel, alignment within specification overall, but unequal toe distribution between the left and right tie rods. The MOST appropriate action is:

A. Replace both tie rods as a precaution

B. Replace the steering rack as a precaution

C. Center the steering wheel, redistribute toe equally between left and right tie rods, retorque jam nuts, and verify the measurement

D. Replace the transmission fluid as the only step

10. The proper procedure for centering the steering wheel during a four-wheel alignment is to:

A. Apply compressed air to the steering

B. Replace the steering rack as a precaution

C. Replace the transmission fluid as the only step

D. Lock the steering wheel in the centered position, adjust toe at each side equally, and verify the wheel remains centered after the adjustment

11. A vehicle has been brought in with the following findings: complaint of pull during braking, worn brake pads on the left front, brake hose damage on the left front, and right front caliper sticking. The MOST appropriate action is:

A. Replace only the brake pads as the most direct repair

B. Address all findings: replace pads, replace damaged hose, service the sticking caliper, and verify proper braking through a road test

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

12. The proper procedure for verifying brake-related pull resolution after repair is to:

A. Replace the alignment as a precaution

B. Replace the steering rack as a precaution

C. Replace the transmission fluid as the only step

D. Perform a road test under varied braking conditions, verify equal braking force, and verify no pull remains

13. A vehicle has been brought in with the following findings: complaint of squeaking from the front suspension during steering input, worn strut bearing, and worn sway bar bushings. The MOST appropriate action is:

A. Replace the worn strut bearing, replace the worn sway bar bushings, and verify proper operation through a road test

B. Replace only the strut bearing as the most direct repair

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

14. The proper procedure for differentiating squeaking noise sources in the front suspension is to:

A. Replace all suspension components as a precaution

B. Replace the steering rack as a precaution

C. Listen during steering input, listen during suspension travel (over bumps), use stethoscope or chassis ear if needed, and inspect each suspect component

D. Replace the transmission fluid as the only step

15. A vehicle has been brought in with the following findings: complaint of rattling from the rear suspension, worn rear shock absorbers, worn rear sway bar end links, and loose exhaust hangers. The MOST appropriate action is:

A. Replace only the rear shocks as the most direct repair

B. Address all findings: replace worn shocks, replace worn end links, secure loose exhaust components, and verify the rattle is resolved

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

16. The proper procedure for differentiating rear suspension rattle from exhaust rattle is to:

A. Replace all rear suspension components as a precaution

B. Replace the exhaust system as a precaution

C. Replace the transmission fluid as the only step

D. Listen and locate the noise source, verify the noise is suspension-related (changes with suspension movement) or exhaust-related (changes with engine speed), and address each accordingly

17. A vehicle has been brought in with the following findings: complaint of pull during straight-line driving, alignment in specification, and a defective right front tire showing internal damage. The MOST appropriate action is:

A. Replace the defective tire, swap to verify the cause, perform an alignment if any angles are affected, and verify proper operation

B. Replace only the alignment as the most direct repair

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

18. The proper procedure for confirming a tire is the cause of pull is to:

A. Replace the tire as a precaution

B. Replace the steering rack as a precaution

C. Perform the swap test by moving the suspect tire to the opposite side, road test, and observe whether the pull direction changes

D. Replace the transmission fluid as the only step

19. A vehicle has been brought in with the following findings: complaint of wandering at highway speeds, low caster on the front (positive 1.5 degrees, manufacturer specification positive 3.5 degrees ± 0.5), and worn ball joints. The MOST appropriate action is:

A. Replace only the alignment as the most direct repair

B. Replace the worn ball joints, adjust caster to specification, perform a four-wheel alignment, and verify the wandering is resolved

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

20. The proper procedure for adjusting front caster on a vehicle equipped with adjustable upper control arms is to:

A. Loosen the caster adjustment bolts or cams, adjust caster to specification, retorque, and verify the measurement

B. Apply compressed air to the suspension

C. Replace the control arms as a precaution

D. Replace the transmission fluid as the only step

21. A vehicle has been brought in with the following findings: complaint of clunking from the rear suspension, worn rear control arm bushings, worn rear shock absorbers, and worn rear sway bar bushings. The MOST appropriate action is:

A. Replace only the rear shocks as the most direct repair

B. Replace the steering rack as a precaution

C. Replace the transmission fluid as the only step

D. Address all findings: replace worn bushings, replace worn shocks, replace worn sway bar bushings, perform alignment, and verify proper operation

22. The proper procedure for verifying rear suspension service has been completed correctly is to:

A. Replace the rear suspension as a precaution

B. Replace the steering rack as a precaution

C. Verify all components are properly installed, perform a four-wheel alignment, road test through varied conditions, and verify no noise or symptoms

D. Replace the transmission fluid as the only step

23. A vehicle has been brought in with the following findings: complaint of TPMS warning light remaining on, recently rotated tires (positions changed), and TPMS sensors verified functional with the TPMS tool. The MOST appropriate action is:

A. Replace the sensors as a precaution

B. Perform the TPMS relearn procedure to register the new sensor positions to the vehicle, verify all sensors are reading correctly, and confirm the warning light is off

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

24. The proper procedure for performing a TPMS relearn after tire rotation is to:

A. Replace all TPMS sensors as a precaution

B. Replace the TPMS module as a precaution

C. Perform the manufacturer-specified relearn procedure (which may use a TPMS tool, the vehicle's procedure, or auto-relearn during driving), and verify proper operation

D. Replace the transmission fluid as the only step

25. A vehicle has been brought in with the following findings: complaint of intermittent vibration that occurs only at specific speeds and is felt through the steering wheel and seat. The MOST likely cause is:

A. Wheel imbalance, tire defect, or worn driveline components producing vibration that resonates at specific speeds

B. A failed power steering pump

C. A worn power steering pulley

D. Air in the clutch hydraulic system

26. The proper procedure for diagnosing intermittent speed-related vibration is to:

A. Replace the tires as a precaution

B. Replace the steering rack as a precaution

C. Replace the transmission fluid as the only step

D. Verify the speed range during which the vibration occurs, inspect tires for defects, verify wheel balance, inspect driveline components, and identify the specific cause

27. A vehicle has been brought in with the following findings: complaint of clunking from the front suspension only when going over the same type of bump (small irregularities), worn strut mount, and worn sway bar end link. The MOST appropriate action is:

A. Replace the steering rack as a precaution

B. Replace the worn strut mount, replace the worn sway bar end link, and verify the clunk is resolved

C. Replace only the strut mount as the most direct repair

D. Replace the transmission fluid as the only step

28. The proper procedure for diagnosing front suspension noise that occurs only on specific bumps is to:

A. Identify the bump characteristics, perform a road test that reproduces the noise, listen for specific component noises, and inspect the suspect components

B. Replace all suspension components as a precaution

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

29. A vehicle has been brought in for a four-wheel alignment. The technician finds that toe is significantly out of specification on both front wheels (toe-out beyond limit). The vehicle has not been in any collisions. The MOST likely cause is:

A. A worn power steering pulley

B. A failed power steering pump

C. Worn tie rod ends, worn idler arm or pitman arm (if equipped), or worn rack and pinion mounting bushings allowing toe variation

D. Air in the clutch hydraulic system

30. The proper procedure for diagnosing toe variations not attributable to alignment adjustment is to:

A. Apply compressed air to the suspension

B. Replace the alignment as a precaution

C. Replace the steering rack as a precaution

D. Inspect tie rod ends, idler and pitman arms (if equipped), rack and pinion mounting bushings, and other steering components for wear

31. A vehicle has been brought in with the following findings: complaint of steering becoming heavy at low speeds, complaint of steering becoming light at high speeds, scan tool data showing erratic vehicle speed sensor signal. The MOST likely cause is:

A. A worn power steering pulley

B. A failed vehicle speed sensor or open circuit in the VSS wiring producing erratic signal that affects EPS speed-sensitive assist

C. A failed power steering pump

D. Air in the clutch hydraulic system

32. The proper procedure for diagnosing EPS issues caused by a vehicle speed sensor fault is to:

A. Verify VSS signal through scan tool data, inspect VSS wiring, verify sensor function under operating conditions, and verify proper EPS speed-sensitive assist response

B. Apply compressed air to the VSS

C. Replace the EPS module as a precaution

D. Replace the transmission fluid as the only step

33. A vehicle has been brought in with the following findings: complaint of clunking from the front suspension during gear engagement (engine in gear, vehicle stopped, brake applied), worn motor mounts, and worn lower ball joints. The MOST likely cause is:

A. A worn power steering pulley

B. A failed power steering pump

C. Worn motor mounts allowing engine torque movement, worn ball joints producing additional movement during the engine's reaction force on the suspension

D. Air in the clutch hydraulic system

34. The proper procedure for verifying motor mount condition is to:

A. Apply compressed air to the mounts

B. Replace the mounts as a precaution

C. Visually inspect for visible damage only

D. Engine running with brake applied, observe motor mount movement during gear engagement, inspect for visible damage, and verify proper engagement contact

35. A vehicle has been brought in with the following findings: complaint of steering wheel pull during straight-line driving, alignment in specification, and tire pressure unequal across the front (left front 30 psi, right front 36 psi). The MOST appropriate action is:

A. Replace only the steering rack as the most direct repair

B. Equalize tire pressure to manufacturer's specification, road test, and verify whether the pull is resolved before any other repair

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

36. The proper procedure for the initial diagnosis of a pull complaint is to:

A. Verify tire pressures are equal and at specification, verify tire condition, road test to confirm the pull, and inspect components and alignment if pull persists

B. Apply compressed air to the steering

C. Replace the alignment as a precaution

D. Replace the transmission fluid as the only step

37. A vehicle has been brought in with the following findings: complaint of vibration during braking, brake rotor runout exceeding specification, brake rotor thickness variation exceeding specification, worn brake pads, and worn front wheel bearings. The MOST appropriate action is:

A. Replace only the brake rotors as the most direct repair

B. Replace the steering rack as a precaution

C. Address all findings: replace or resurface rotors, replace pads, replace worn wheel bearings, and verify proper operation

D. Replace the transmission fluid as the only step

38. The proper procedure for verifying brake rotor service has been completed correctly is to:

A. Apply compressed air to the rotors

B. Replace the rotors as a precaution

C. Verify rotor runout and thickness are within specification after service, road test through varied braking conditions, and verify no vibration during braking

D. Replace the transmission fluid as the only step

39. A vehicle has been brought in with the following findings: complaint of off-center steering wheel, recently completed alignment, and the alignment service did not include centering the steering wheel during the procedure. The MOST appropriate action is:

A. Re-perform the alignment with the steering wheel locked in the centered position, redistribute toe equally between left and right, retorque jam nuts, and verify the steering wheel is centered

B. Replace the steering rack as a precaution

C. Replace the steering wheel as a precaution

D. Replace the transmission fluid as the only step

40. The proper procedure for verifying steering wheel centering after alignment is to:

A. Replace the steering wheel as a precaution

B. Confirm the steering wheel is centered with the wheels straight on a level surface, road test to verify the wheel remains centered during straight-line driving, and verify the alignment is within specification

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

PRACTICE EXAM 4: A4 SIMULATION — ANSWER KEY, EXPLANATIONS, AND TASK REMEDIATION

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1. B — Adjust both front camber values to specification, perform a four-wheel alignment, and verify proper pull resolution. The 1.2-degree camber split between the front wheels is the cause of both the pull and the inside-edge tire wear on the right front. Adjusting both wheels to specification addresses both symptoms simultaneously. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

2. D — Verify the customer concern, inspect components, perform a four-wheel alignment, and identify the relationship between the symptoms. Multi-symptom complaints often share a common cause. Systematic diagnosis identifies the relationship between the symptoms and addresses the root cause. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

3. C — Replace all worn components, perform an alignment, and verify the noise resolution. Multiple worn front suspension components require comprehensive replacement. Addressing only one component leaves others that contribute to the symptom and will fail soon. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

4. A — Verify all components are properly installed, perform an alignment, road test through varied conditions, and verify no noise or symptoms remain. Suspension service verification requires comprehensive approach including installation verification, alignment, road test, and operational verification. Each step confirms a different aspect of proper service. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

5. D — A defective tire (out-of-round, separated tread, or internal damage), or a defective wheel with excessive runout. Highway-speed vibration with normal alignment, balance, and components localizes the cause to tire or wheel defects. Each defect type produces vibration that other diagnostics miss. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

6. B — Inspect tires for visible damage, measure tire and wheel runout, inspect the wheel for damage, and consider replacement as appropriate. When standard diagnostics show normal results, tire and wheel runout measurement and damage inspection identify the remaining causes. Each

measurement reveals different aspects of tire/wheel condition. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

7. D — Replace all worn dampers and mounts, replace or rotate the cupped tires, and verify alignment. Worn dampers cause cupping; replacing dampers and mounts addresses the source. The cupped tires may continue to produce vibration even after damper replacement, so they should be replaced or rotated. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

8. A — Replace damaged dampers and mounts, replace or rotate affected tires, perform an alignment, and verify proper operation through a road test. Suspension repair verification for tire cupping requires component replacement, tire service, alignment, and operational verification. Each step is required for complete repair. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

9. C — Center the steering wheel, redistribute toe equally between left and right tie rods, retorque jam nuts, and verify the measurement. Off-center steering wheel with proper total toe indicates unequal toe distribution. Redistributing toe equally between the tie rods centers the steering wheel without affecting total toe. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

10. D — Lock the steering wheel in the centered position, adjust toe at each side equally, and verify the wheel remains centered after the adjustment. Steering wheel centering during alignment requires wheel lock at center, equal adjustment at each side, and post-adjustment verification. Each step ensures the wheel remains centered. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

11. B — Address all findings: replace pads, replace damaged hose, service the sticking caliper, and verify proper braking through a road test. Multiple brake-related findings require comprehensive repair. Each component contributes to the pull symptom; partial repair leaves other issues. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

12. D — Perform a road test under varied braking conditions, verify equal braking force, and verify no pull remains. Brake repair verification requires road testing under varied braking conditions. Equal braking force and absence of pull confirm proper repair completion. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

13. A — Replace the worn strut bearing, replace the worn sway bar bushings, and verify proper operation through a road test. Multiple worn components producing squeak require replacement of each affected component. Bearing and bushing wear both contribute to the steering input squeaking. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

14. C — Listen during steering input, listen during suspension travel (over bumps), use stethoscope or chassis ear if needed, and inspect each suspect component. Squeak source differentiation requires listening under conditions that load each suspect component. Stethoscope or chassis ear isolates the specific source for inspection. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

15. B — Address all findings: replace worn shocks, replace worn end links, secure loose exhaust components, and verify the rattle is resolved. Multiple sources of rattling require addressing each cause. Worn shocks, end links, and loose exhaust each contribute to the symptom. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

16. D — Listen and locate the noise source, verify the noise is suspension-related (changes with suspension movement) or exhaust-related (changes with engine speed), and address each accordingly. Rattle source differentiation uses operational characteristics. Suspension noise correlates with suspension movement; exhaust noise correlates with engine speed. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

17. A — Replace the defective tire, swap to verify the cause, perform an alignment if any angles are affected, and verify proper operation. Defective tire causing pull requires replacement and verification. The swap test confirms the tire was the cause; alignment verifies all angles after the change. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

18. C — Perform the swap test by moving the suspect tire to the opposite side, road test, and observe whether the pull direction changes. The swap test confirms tire-caused pull. Pull that changes direction with the swap is tire-caused; pull that stays the same has another cause. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

19. B — Replace the worn ball joints, adjust caster to specification, perform a four-wheel alignment, and verify the wandering is resolved. Wandering with low caster and worn ball joints requires both component replacement and caster correction. Each contributes to wandering; both must be addressed. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

20. A — Loosen the caster adjustment bolts or cams, adjust caster to specification, retorque, and verify the measurement. Caster adjustment uses the upper control arm adjustment bolts or cams. Loosening, adjusting, retorquing, and verifying confirms proper caster setup. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

21. D — Address all findings: replace worn bushings, replace worn shocks, replace worn sway bar bushings, perform alignment, and verify proper operation. Multiple worn rear suspension components require comprehensive replacement. Each component contributes to the clunking symptom. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

22. C — Verify all components are properly installed, perform a four-wheel alignment, road test through varied conditions, and verify no noise or symptoms. Rear suspension service verification requires comprehensive approach. Installation, alignment, road test, and operational verification together confirm proper service. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

23. B — Perform the TPMS relearn procedure to register the new sensor positions to the vehicle, verify all sensors are reading correctly, and confirm the warning light is off. After tire rotation, sensor positions change. The TPMS relearn procedure registers the new positions; without it, the system shows a warning. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

24. C — Perform the manufacturer-specified relearn procedure (which may use a TPMS tool, the vehicle's procedure, or auto-relearn during driving), and verify proper operation. TPMS relearn procedures vary by manufacturer. The proper procedure must be followed; verification confirms the relearn was successful. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

25. A — Wheel imbalance, tire defect, or worn driveline components producing vibration that resonates at specific speeds. Speed-specific vibration felt through both wheel and seat is the diagnostic signature of resonance from imbalance or defect. The vibration peaks where its frequency matches a system resonance. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

26. D — Verify the speed range during which the vibration occurs, inspect tires for defects, verify wheel balance, inspect driveline components, and identify the specific cause. Speed-related vibration diagnosis requires verification of the speed range and inspection of all potential sources. Each component must be evaluated since multiple causes can produce similar symptoms. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

27. B — Replace the worn strut mount, replace the worn sway bar end link, and verify the clunk is resolved. Multiple worn components producing clunk on specific bumps require replacement of each. The components contribute to the symptom under those specific load conditions. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

28. A — Identify the bump characteristics, perform a road test that reproduces the noise, listen for specific component noises, and inspect the suspect components. Bump-specific suspension noise diagnosis requires identification of the bump characteristics and road test reproduction. Listening and component inspection then identify the specific source. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

29. C — Worn tie rod ends, worn idler arm or pitman arm (if equipped), or worn rack and pinion mounting bushings allowing toe variation. Toe out of specification without collision history indicates worn steering components. Each component allows toe to vary, producing alignment

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

30. D — Inspect tie rod ends, idler and pitman arms (if equipped), rack and pinion mounting bushings, and other steering components for wear. Toe variation without adjustment cause requires inspection of all steering components that affect toe. Each component must be evaluated for wear. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

31. B — A failed vehicle speed sensor or open circuit in the VSS wiring producing erratic signal that affects EPS speed-sensitive assist. Inverted speed-sensitive assist (heavy at low speed, light at high speed) is the diagnostic signature of erratic VSS signal. The EPS module receives incorrect speed information and provides inappropriate assist. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

32. A — Verify VSS signal through scan tool data, inspect VSS wiring, verify sensor function under operating conditions, and verify proper EPS speed-sensitive assist response. EPS issues from VSS faults require systematic VSS diagnosis. Scan data, wiring inspection, function verification, and EPS response verification together identify the issue. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

33. C — Worn motor mounts allowing engine torque movement, worn ball joints producing additional movement during the engine's reaction force on the suspension. Clunking during gear engagement is the diagnostic signature of motor mount and ball joint wear. The engine's torque movement on worn mounts produces force on the suspension's worn ball joints. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

34. D — Engine running with brake applied, observe motor mount movement during gear engagement, inspect for visible damage, and verify proper engagement contact. Motor mount verification requires dynamic observation under torque conditions. Visible damage inspection and engagement contact verification confirm condition. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

35. B — Equalize tire pressure to manufacturer's specification, road test, and verify whether the pull is resolved before any other repair. Unequal tire pressures produce pull. The 6 psi differential between left and right is significant; equalizing pressure may resolve the pull without further repair. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

36. A — Verify tire pressures are equal and at specification, verify tire condition, road test to confirm the pull, and inspect components and alignment if pull persists. Pull diagnosis begins with tire pressure verification because pressure differences are a common and easily-correctable cause. Other diagnostics follow if pressure correction does not resolve the issue. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

37. C — Address all findings: replace or resurface rotors, replace pads, replace worn wheel bearings, and verify proper operation. Multiple brake- and bearing-related findings require comprehensive repair. Rotors, pads, and bearings each contribute to the vibration symptom. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

38. C — Verify rotor runout and thickness are within specification after service, road test through varied braking conditions, and verify no vibration during braking. Brake rotor service verification requires post-service measurement, road test, and operational verification. Each step confirms proper repair completion. *ASE Task Reference: A4 Domain B — Suspension Systems Diagnosis and Repair. Review subsection 4.2.*

39. A — Re-perform the alignment with the steering wheel locked in the centered position, redistribute toe equally between left and right, retorque jam nuts, and verify the steering wheel is centered. Alignment without centering the steering wheel produces off-center wheel even with proper alignment angles. Re-performing the alignment with proper procedure corrects the issue. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

40. B — Confirm the steering wheel is centered with the wheels straight on a level surface, road test to verify the wheel remains centered during straight-line driving, and verify the alignment is within specification. Steering wheel centering verification requires confirmation, road test verification, and alignment confirmation. Each step ensures proper service completion. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*