

TEST YOUR AUTOMOTIVE TECHNICAL KNOWLEDGE

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This self-test can help you determine how much you really know about this subject. Questions are written in the ASE style format and are multiple choice.

The answer key is on the last page.

There are also links to related articles on the <https://www.AA1Car.com> website. Good luck!

WHEEL ALIGNMENT SELF-TEST

1. In an SLA suspension, with a spring on the LOWER control arm, which ball joint is “loaded” by the weight of the vehicle?
 - a. Upper only
 - b. Lower only
 - c. Upper or lower depending on the placement of the spring
 - d. Both upper and lower

2. All of the following can cause tire wear EXCEPT:
 - a. Worn tie rod ends
 - b. Worn steering gear
 - c. Worn idler arm
 - d. Worn center link

3. Vehicle RIDE HEIGHT affects which of the following?
 - a. Camber
 - b. Caster
 - c. Suspension travel
 - d. All of the above

4. Technician A says camber and caster both change when the wheels are steered. Technician B says front toe changes when the wheels are steered. Who is right?
 - a. Technician A only
 - b. Technician B only
 - c. Both Technician A and Technician B
 - d. Neither Technician A nor Technician B

5. What is ACKERMAN STEERING or TOE-OUT ON TURNS?
 - a. To minimize tire scuff and wear when turning
 - b. To improve steering return after turning
 - c. To improve steering stability
 - d. To reduce steering harshness

6. A vehicle with insufficient CASTER may experience which of the following conditions?
- Increased steering effort
 - Increased steering harshness
 - High speed steering shimmy
 - Low speed steering instability
7. Technician A says a vehicle will pull towards the side with the most (positive) camber. Technician B says a vehicle will pull towards the thrust angle. Who is right?
- Technician A only
 - Technician B only
 - Both Technician A and Technician B
 - Neither Technician A nor Technician B
8. Only one front tire only shows heavy wear on the INSIDE area of the tread. The most likely cause is:
- Negative camber
 - Positive camber
 - Toe-in
 - Toe-out
9. An Off-center steering wheel may be caused by ANY of the following EXCEPT:
- Sagging ride height
 - Rear thrust angle
 - Rear toe misalignment
 - Unequal adjustments to the front tie rods
- 10 Which of the following has the greatest effect on directional stability?
- Front toe
 - Front camber
 - SAI
 - Turning angle
11. Technician A says too much caster can increase steering effort. Technician B says too little caster can increase steering instability. Who is right?
- Technician A only
 - Technician B only
 - Both Technician A and Technician B
 - Neither Technician A nor Technician B
12. If the steering feels “loose” which of the following should be inspected for wear?
- Tie rod ends
 - Inner tie rod sockets
 - Steering column couplings
 - All of the above

13. Which of the following would cause of a steering pull to the right?
- A dragging left front brake caliper
 - Too much **NEGATIVE CAMBER** on the **LEFT** front wheel
 - too much **POSITIVE CAMBER** on the **LEFT** front wheel
 - A positive thrust angle
14. Technician A says coil springs should always be replaced in matched sets (both front springs and/or both rear springs).
Technician B says **RIDE HEIGHT** should always be checked before doing an alignment.
Who is right?
- Technician A only
 - Technician B only
 - Both Technician A and Technician B
 - Neither Technician A nor Technician B
15. Which of the following is the most like cause of a **BUMP STEER** condition where the steering jerks slightly to one side when hitting a bump in the road?
- Steering linkage or steering rack not level with respect to the road
 - Worn idler arm
 - Excessive caster
 - Loose wheel bearings
16. Both front tires show heavy wear across the inside area of the tread with a feathered wear pattern across the tread. The most like cause is:
- Negative camber
 - Positive camber
 - Toe-in
 - Toe-out
17. Technician A recommends aligning the wheels to correct a high speed wheel vibration problem.
Technician B recommends aligning the wheels to restore proper ride height.
Who is right?
- Technician A only
 - Technician B only
 - Both Technician A and B
 - Neither Technician A nor B
18. The **CAMBER** reading on the **RIGHT** front wheel of a **FWD** car is four degrees out of specifications. The most likely cause is:
- Misadjusted camber bolts
 - Bent strut
 - Worn control arm bushings
 - Worn lower ball joint
19. A Rear-Wheel Drive (RWD) pickup truck has a steering pull to one side and an off-center steering wheel. Which of the following procedures would most likely correct the condition?
- A two wheel alignment
 - A thrust angle alignment
 - Adjust front toe only
 - Adjust front camber only

20. The alignment readings on a vehicle show one and a half degrees of positive camber for the left front wheel and zero degrees camber for the right front wheel. Which of the following conditions would this vehicle most likely exhibit?

- a. No steering problems
- b. A steering pull to the left
- c. A steering pull to the right
- d. Excessive tire wear

21. The Steering Axis Inclination (SAI) angle is out of specification on a FWD car. Any of the following may be a cause EXCEPT:

- a. Bent strut
- b. Bent spindle
- c. Bent steering arm
- d. Mislocated engine cradle

22. Technician A says alignment angles that are within specifications display GREEN on this alignment machine, while those that are out of range display RED.

Technician B says alignment specs can vary from one vehicle to another, so it is important to always refer to the factory specifications when checking alignment.

Who is right?

- a. Technician A only
- b. Technician B only
- c. Both Technician A and B
- d. Neither Technician A nor B

23. Technician A says front CAMBER changes during jounce and rebound when the suspension moves up and down after hitting a bump in the road.

Technician B says REAR TOE alignment can change when driving as a result of compliance in the rear suspension control arm bushings.

Who is right?

- a. Technician A only
- b. Technician B only
- c. BOTH Technician A and B
- d. Neither Technician A nor B

24. Technician A says REAR TOE should be adjusted first before adjusting REAR CAMBER when doing a 4-wheel alignment.

Technician B says FRONT CAMBER AND CASTER should be adjusted before FRONT TOE when doing a two wheel (front only) alignment.

Who is right?

- a. Technician A only
- b. Technician B only
- c. Both Technician A and Technician B
- d. Neither Technician A nor Technician B

25. Many late model vehicles do not have factory camber/caster adjustments. If the wheels are out of alignment, what can be done?

- a. Replace worn or damaged suspension parts to correct the misalignment
- b. Install aftermarket strut mounts, offset ball joint s or offset bushings to correct
- c. Have a body shop bend the strut tower(s) to correct camber/caster
- d. Any of the above

(Answer Key on Next Page)

ANSWER KEY

1B, 2B, 3D, 4B, 5A, 6C, 7A, 8A, 9A, 10B, 11C, 12D, 13B, 14C, 15A, 16D
17D, 18B, 19B, 20B, 21C, 22C, 23C, 24C, 25D



Wheel Alignment Topics on AA1Car.com:

[Fixing Common Alignment Problems](#)

[Basics of Wheel Alignment: Camber, Caster & Toe](#)

[How To Align The Unalignable](#)

[Aligning Light Trucks & SUVs](#)

[Correcting Steering Pulls](#)

[Rack & Pinion Steering Inner Tie Rod Sockets](#)

[Torque Steer in FWD Cars](#)

[How To Inspect Your Car's Suspension](#)

[How Spring Sag Affects Chassis Ride Height](#)

[Ball Joints: Inspection & Replacement Tips](#)