



Math Study Strategies

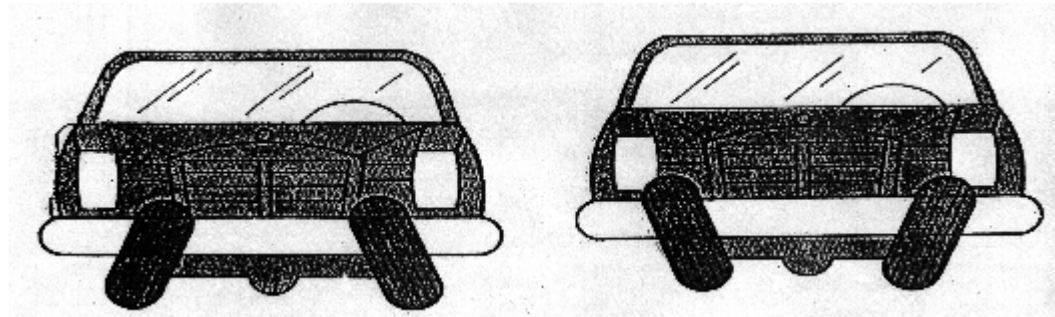
Math for Automotives



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Audio Version
Approx opening time
1.5 min at 56K

Alignment

When you have the wheels aligned on your car, the mechanic checks and adjusts the camber of the wheels. **Camber** is the angle that the wheels are tilted inward or outward. It is the number of degrees in the angle made by the wheel with a true vertical (a true vertical is a line that is perpendicular to the ground). The sign of the degrees (+ or -) tells which way the wheel is leaning, to the right or the left of the true vertical.



Positive camber means that the front wheels lean inward at the top. A slight positive camber is part of a proper adjustment.

A.
The camber of a jeep was set at the factory at $\frac{1^\circ}{2}$. After 20,000 miles of dirt roads, the wheels are $-\frac{3^\circ}{4}$ out of adjustment. What is the new camber?

$$\begin{aligned} &\text{adjusted camber} + \frac{1^\circ}{2} \\ &+ \text{change in camber} + \left(-\frac{3^\circ}{4}\right) \\ &= \text{new camber} \\ &\frac{1}{2} + \left(-\frac{3}{4}\right) = \frac{2}{4} + \left(-\frac{3}{4}\right) = -\frac{1}{4}^\circ \end{aligned}$$

Negative camber means that the front wheels lean outward at the top.

B.
The camber of a truck was set at $+\frac{1^\circ}{2}$. After 30,000 miles it was -1° .
What was the change in camber?

$$\begin{aligned} &\text{adjusted camber} + \frac{1^\circ}{2} \\ &+ \text{change in camber} + (-1) \\ &= \text{new camber} \\ &\frac{1}{2} - (-1) = \frac{1}{2} + 1 = \frac{1+2}{2} = \frac{3}{2} = 1\frac{1}{2}^\circ \end{aligned}$$