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Pressure in auto tire



Car weight = 3000 lbs

Weight spread out evenly on 4 tires.

Each tire flattened to contact road with 30 in^2 of surface

Find pressure in each tire

Solution: Each tire supports $\frac{1}{4}$ of car's weight or $\frac{3000 \text{ lbs}}{4}$ or 750 lbs, on 30 in^2 of surface per tire.

$$\text{Pressure} = \frac{\text{Force}}{\text{Area}}$$

$$= \frac{750 \text{ lbs}}{30 \text{ in}^2}$$

$$= 25 \text{ lbs/in}^2 \text{ or}$$

$$\text{Pressure} = 25 \text{ PSI.}$$