

Anything Closer than Stopping Distance Demands Choice

$$\text{distance} = \text{velocity}^2 / (2 \cdot \text{acceleration})$$

Plugging in, we obtain...

$$\begin{aligned} \text{distance} &= 13 \cdot 13 / (2 \cdot 8.45) \\ &= 169 / 16.9 \\ &= 10 \text{ meters (33 feet, 11 yards)} \end{aligned}$$

That's assuming an instantaneous reaction.

If anything gets into the next 10m of the car's path, either **the car has to swerve or hit the object.**