CALCULATING STOPPING DISTANCE

A car is traveling 40 mph. An animal darts out onto the road. It takes the driver 1.5 seconds to realize what’s happening and hit the brakes.

Find the Reaction Distance

- Convert mph to feet per hour: 40 mph x 5,280 feet per mile = 211,200 feet per hour
- Convert feet per hour to feet per second:
  211,200 feet ÷ 3,600 seconds per hour = 59 feet per second*
- Calculate the reaction distance in feet per second: 59 feet x 1.5 seconds = 89 feet*

The reaction distance is 89 feet.

Consider the Braking Distance

Now imagine the roads are dry. The car travels another 76 feet in braking distance before stopping.

Find the Stopping Distance

89 feet (reaction distance) + 76 feet (braking distance) = 165 feet

The car travels a total of 165 feet before stopping—that’s more than the width of a football field. A football field is 360 feet long and 160 feet wide.

*Answer rounded to the nearest whole number
Round each answer to the nearest whole number.

1. A car is traveling 55 mph. Another car stops in front of it.
   a) It takes the driver 1.5 seconds to react. What’s the reaction distance? ____________
   b) The pavement is dry. The car begins to slow. It travels another 144 feet in braking distance before stopping. What’s the total stopping distance on dry pavement? ____________
   c) Add 39 feet for wet roads. What’s the stopping distance now? ____________

2. A car is speeding at 70 mph. The driver sees something blocking the road.
   a) The reaction time is 1.5 seconds. What’s the reaction distance? ____________
   b) The braking distance as the car decelerates on dry pavement is 233 feet. What’s the stopping distance? ____________
   c) Now imagine that the driver is distracted. It takes the driver 3 seconds to react. What’s the reaction distance? ____________
   d) Assuming the same 233 feet braking distance, what’s the stopping distance? ____________
   e) How does each stopping distance compare to a football field, which is 360 feet long and 160 feet wide? ____________

3. What are the potential risks for a driver who is speeding and attempting to stop the car?

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   ________________________________________________________________
   ________________________________________________________________
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DID YOU KNOW? In 2015, 9,557 people died in car crashes where at least one person was speeding.