A pick up truck moving at 32 m/s must come to a stop in 206m to avoid hitting a boulder that has fallen onto the road. How much time does the driver need to avoid the accident?

Answer:

Distance in the case of body motion with constant acceleration (deceleration) is given by

$$l = \frac{v + v_0}{2} t.$$

Thus, the time does the driver need to avoid the accident is

$$t = \frac{2l}{v + v_0} = \frac{2 \times 206}{32 + 0} = 12.875 \text{ s.}$$

Answer. $t = 12.875$ s.