

Physics 101Rec
Quiz#1-Sect04
Chapter2

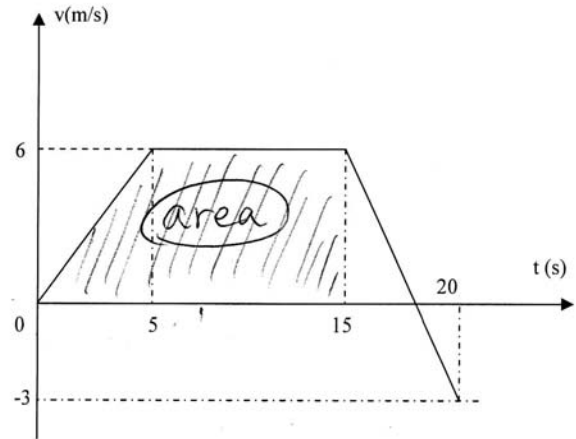
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The Figure shows the velocity-time graph of a particle moving from the origin in a straight line.

- What is the distance traveled by the car from $t = 0$ to $t = 15$ s?
- What is the acceleration of the particle during the time interval between $t = 15$ s and $t = 20$ sec?



$$\begin{aligned} \text{a) Area under the curve} &= \frac{1}{2} \cdot 6 \times 5 + 10 \times 6 \\ &= 15 + 60 = 75 \text{ m.} \end{aligned}$$

$$\text{b) } \bar{a} = \frac{\Delta v}{\Delta t} = \frac{-3 - 6}{5} = -\frac{9}{5} = \boxed{-1.8 \text{ m/s}^2}$$