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2013 10 A particle is moving along the x -axis. The displacement of the particle at time t seconds is x metres. At a certain time, $\dot{x} = -3 \text{ ms}^{-1}$ and $\ddot{x} = 2 \text{ ms}^{-2}$. Which statement describes the motion of the particle at that time?

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- (A) The particle is moving to the right with increasing speed.
- (B) The particle is moving to the left with increasing speed.
- (C) The particle is moving to the right with decreasing speed.
- (D) The particle is moving to the left with decreasing speed.

D

$\dot{x} = -3$ means the particle is moving to the left; as $\ddot{x} = +2$, the particle is slowing down.

\therefore particle is moving to the left with decreasing speed.

State Mean:
0.26

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