AP CALC – DO NOW

Weebly → Week 13

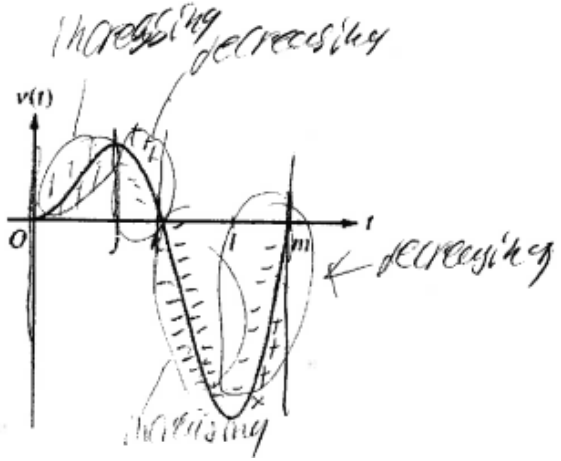
(Answer these questions in your PRACTICE notebook)

1. What is the problem asking for?

2. Explain each student's annotations on the graph. Which is more thorough?

3. Both students selected C, the correct answer. Which student's justification is stronger? Cite to specific phrases either student uses to elaborate on your decision.

Student 1



A particle moves along a straight line. The graph of the particle's velocity $v(t)$ at time t is shown above for $0 \le t \le m$, where j, k, l, and m are constants. The graph intersects the horizontal axis at $t = 0$, $t = k$, and $t = m$ and has horizontal tangents at $t = j$ and $t = l$. For what values of t is the speed of the particle decreasing?

(A) $j \le t \le l$

(B) $k \le t \le m$

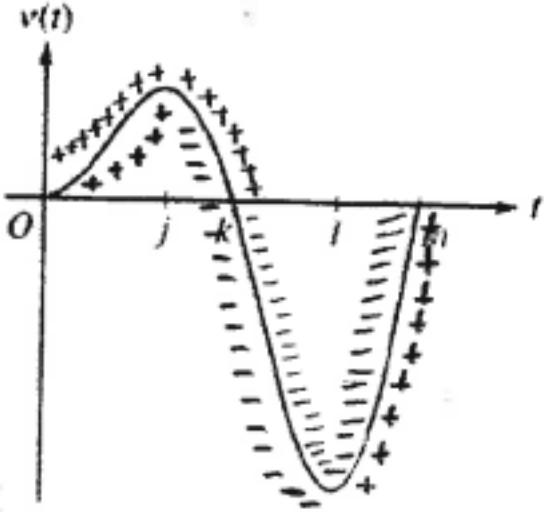
(C) $j \le t \le k$ and $l \le t \le m$

(D) $0 \le t \le j$ and $k \le t \le l$

(E) $0 \le t \le j$ and $l \le t \le m$

The particle is decreasing at two points, $j \le t \le k$ and $l \le t \le m$, because if we were to graph out $A(t)$ then at those sections the signs would not match with $V(t)$ therefore there wouldn't be an increase but rather a decrease.

Student 2



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(A) $j \le t \le l$ speeding up

(B) $k \le t \le m$ speeding up then slowing down

(C) $j \le t \le k$ and $l \le t \le m$

(D) $0 \le t \le j$ (speeding up) and $k \le t \le l$ (speeding up)

(E) $0 \le t \le j$ (speeding up) and $l \le t \le m$ (slowing down)

the speed of the particle is decreasing at $j \le t \le k$ and $l \le t \le m$ because the signs of velocity and acceleration are different during these intervals.