20-P-KM-AF-010

Curvilinear Motion: ~~Intermediate.~~ Beginner

Q: A particle moves with velocity of $v = \{ A\hat{i} + Bt\hat{j} + [C - t]\hat{k} \}$ m/s
What is the position at the following times:
$t = D, E, F$ s. What is the acceleration

A: @ time D

position

$\hat{i} = A \cdot D$, $\hat{j} = B \cdot D \cdot D$, $\hat{k} = (C - D) \cdot D$

acceleration

$a_x = dv_x/dt = 0$ $a_y = dv_y/dt = B$ $a_z = dv_z/dt = -1$

@ time E

$\hat{i} = A \cdot E$, $\hat{j} = B \cdot E^2$, $\hat{k} = (C - E) \cdot E$

@ time F

$\hat{i} = A \cdot F$, $\hat{j} = B \cdot F^2$, $\hat{k} = (C - F) \cdot F$