

77. With no acceleration in the x direction yet a constant acceleration of 1.4 m/s^2 in the y direction, the position (in meters) as a function of time (in seconds) must be

$$\vec{r} = (6.0t)\hat{i} + \left(\frac{1}{2}(1.4)t^2\right)\hat{j}$$

and \vec{v} is its derivative with respect to t .

- (a) At $t = 3.0 \text{ s}$, therefore, $\vec{v} = 6.0\hat{i} + 4.2\hat{j} \text{ m/s}$.
(b) At $t = 3.0 \text{ s}$, the position is $\vec{r} = 18\hat{i} + 6.3\hat{j} \text{ m}$.