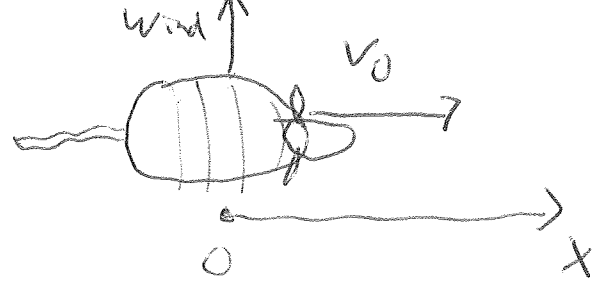
5-94 $x_0 = 0$, $v_0 = 5\ m/s\ \hat{x}$

$F_{wind} = +17\ N\ \hat{y}$

$m = 12\ kg$



after 3.0s, what's $\vec{v}$ and (x, y)? let position $= \vec{r}(x, y)$

Two problems: motion in $\hat{x}$, $\hat{y}$.

Do $\hat{x}$ first. Has v_0, but no a_x, so $\vec{v}_x$ will always be $5.0\ m/s\ \hat{x}$

and $x = x_0 + v_0 t = 0 + (5.0\ m/s)(3.0\ s) = 15\ m\ \hat{x}$

In $\hat{y}$, $v_{0y} = 0$, but a_y is there since there's $\vec{F} = 17\ N\ \hat{y}$

$F = ma$, so $a_y = \frac{\vec{F}}{m} = \frac{17\ N}{12\ kg} = 1.42\ m/s^2\ \hat{y}$

$$y = y_0 + v_{0y} t + \tfrac{1}{2} a_y t^2$$

$$= 0 + 0 + \tfrac{1}{2} \left(\frac{17\ N}{12\ kg}\right)(3.0\ s)^2\ \hat{y}$$

$$= +6.4\ m\ \hat{y}$$

$$v_y = v_{0y} + a_y t = 0 + \frac{17\ N}{12\ kg}(3.0\ s)\ \hat{y} = 4.3\ m/s\ \hat{y}$$

so: a) $\vec{v}(3.0\ s) = 5.0\ m/s\ \hat{x} + 4.3\ m/s\ \hat{y}$

b) $\vec{r}(3.0\ s) = 15\ m\ \hat{x} + 6.4\ m\ \hat{y}$