§4.7

$a_c = \frac{v^2}{r} \Rightarrow F_c = m\frac{v^2}{r}$

#70 $r = 3.00\,m$

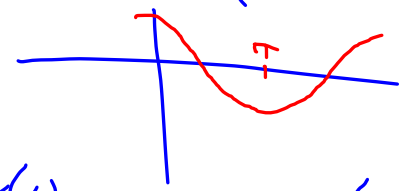
$\nu = f = \frac{1}{20\,sec} \Rightarrow \omega = 2\pi\nu$

$\omega = 2\pi f$

$y = A\cos\omega(t-\phi) + D$

$v = r\omega = \frac{2\pi(3_m)}{20\,sec} = \frac{3\pi}{10}\ m/s$

$y(t) = 3m\cos\left(\frac{2\pi}{20}(t-\pi)\right) + 3_m$



$x(t) = 3m\cos\left(\frac{\pi}{10}\left(t+\frac{\pi}{2}\right)\right)$

$d_{5sec} = (x(5), y(5))$

$v = x'(t)\vec{i} + y'(t)\vec{j}$

a= x" i+ y"j