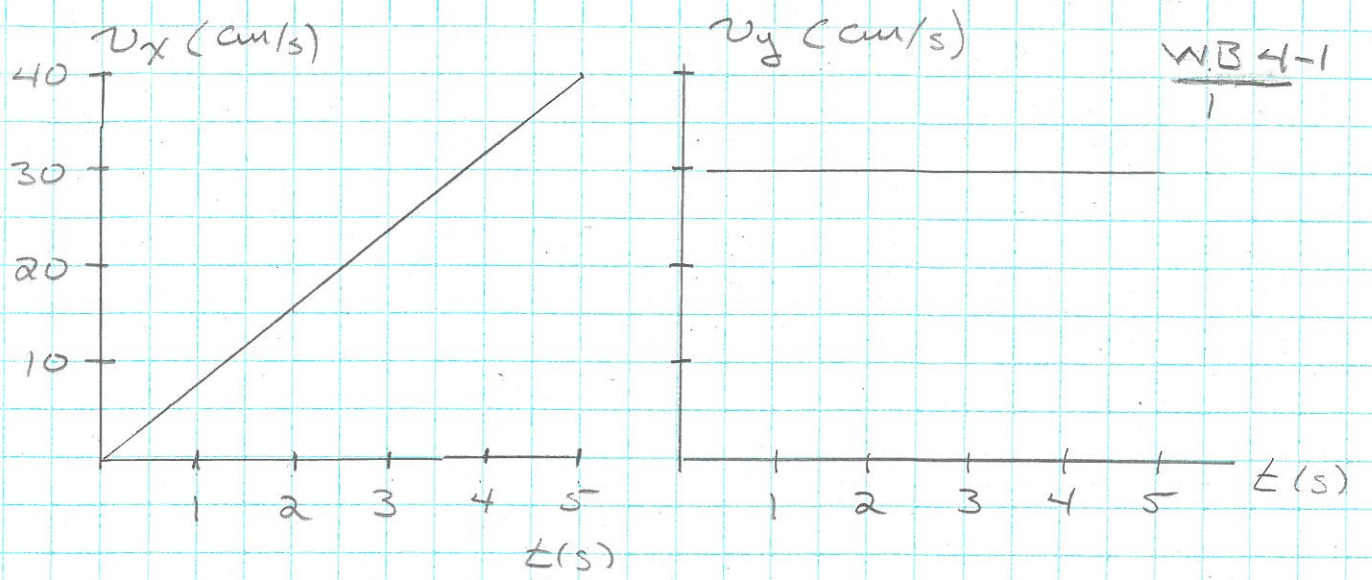

WB 4-1
1

$v_x \propto t$ $\qquad$ v_y = constant

a.) at $t = 2s$: $v_x = 16$ cm/s & $v_y = 30$ cm/s

$\therefore \theta = \tan^{-1}\left(\frac{v_y}{v_x}\right) =$ 61.93° above +x axis

→ Reading precisely from the graph!

b.) Assume $x(t=0) = y(t=0) = 0$

$$x(t=5) = x(t=0) + \underbrace{\int_0^5 v_x\,dt}_{\text{area}}$$

$$= \frac{1}{2}(5)(40) = 100 \text{ cm}$$

and,

$$y(t=5s) = y(t=0) + \underbrace{\int_0^5 v_y\,dt}_{\text{area}}$$

$$= 5(30) = 150 \text{ cm}$$

$\therefore r = \sqrt{x^2+y^2} =$ 180.3 cm