

2/79 Set up x-y coordinates with origin at A.

$$x = x_0 + v_{x_0} t \text{ @ B: } 800 + s \cos 20^\circ = (120 \cos 40^\circ) t \quad (1)$$

$$y = y_0 + v_{y_0} t - \frac{1}{2} g t^2 \text{ @ B:}$$

$$-s \sin 20^\circ = (120 \sin 40^\circ) t - \frac{9.81}{2} t^2 \quad (2)$$

Solve (1) & (2) simultaneously to obtain

$$\underline{s = 1057 \text{ m}}, \quad \underline{t = 19.50 \text{ s}}$$