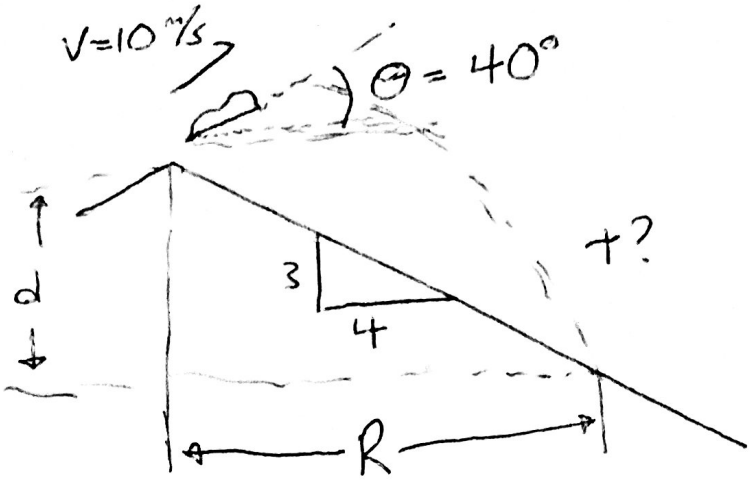

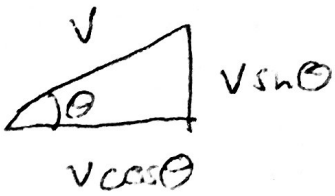

horizontal

$$R = V\cos\theta\, t$$

vertical

$$d = V\sin\theta\, t + \frac{1}{2} g t^2$$

relation

$$d = R \times \frac{3}{4}$$

unknowns d, R, t
solve for t, R

$$V\cos\theta\, t = R = \frac{4}{3} d = \frac{4}{3}\left(V\sin\theta\, t + \frac{1}{2} g t^2\right)$$

$$\frac{1}{2} g t^2 + \left(V\sin\theta - \frac{3}{4} V\cos\theta\right) t = 0$$

$$t = 0, \frac{-2V}{g}\left(\sin\theta - \frac{3}{4}\cos\theta\right)$$

$$R = V\cos\theta \left(\frac{-2V}{g}\right)\left(\sin\theta - \frac{3}{4}\cos\theta\right)$$