$$\sin\theta = \frac{v}{v_s} = \frac{1}{M}, \quad \theta = \sin^{-1}\left(\frac{1}{1.2}\right) = 56.47^\circ$$

$$y = v_s t \tan\theta = 411.60 \text{ m/s}\left(15.00 \text{ s}\right)\tan 56.47^\circ = 9.31 \text{ km}$$