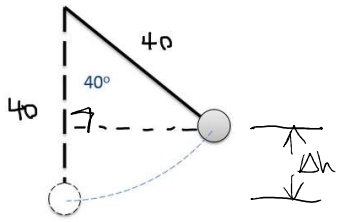
- A 2000 lb wrecking ball hangs from the end of a 40 ft cable. If the wrecking ball is released from an angle of 40 degrees, what would we expect the maximum velocity at the bottom point to be?



$$\Delta h = 40\cos(40) - 40$$
$$= -9.36 \text{ ft}$$

$$W = \Delta KE + \Delta PE$$

$$0 = \frac{1}{2} m v_f^2 + mg\Delta h$$

$$0 = \frac{1}{2}\left(\frac{2000}{32.2}\right) v_f^2 + 2000(-9.36) \Rightarrow v_f = 24.55 \text{ ft/s}$$