

1. $m = .055 \text{ kg}$ $r = .01$

$$A = \pi r^2 = .00031416 \text{ m}^2$$

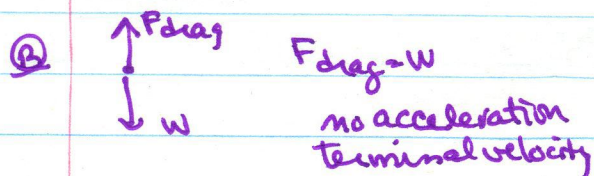
$$h = 320 \text{ m}$$

(A)

	mgh	$\frac{1}{2}mv^2$	TOTAL
release	$(.055)(9.8) \cdot 320$	0	172.48
ground	0	$\frac{1}{2}(.055)v^2$	$.0275v^2$

conservation of energy $.0275v^2 = 172.48$

$$v = \underline{\underline{79.2 \text{ m/s}}}$$



$$\frac{1}{2} C_p A v^2 = mg$$

$$\frac{1}{2} (.6)(1.2)(.00031416) v^2 = (.055)(9.8)$$

$$v = \sqrt{\frac{(.055)(9.8)}{(.5)(.6)(1.2)(.00031416)}} = \underline{\underline{69.0 \text{ m/s}}}$$

energy lost

$$\frac{1}{2} m v_A^2 - \frac{1}{2} m v_B^2$$

$$\frac{1}{2} (.055)(79.2)^2 - \frac{1}{2} (.055)(69)^2 = \underline{\underline{91.6 \text{ Joules}}}$$