1. $m = .055kg$ $r = .01$

$A = \pi r^2 \approx .00031416 m^2$

$h = 320m$

(A)

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

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

$v = 79.2 m/s$

(B)

$F_{drag} = w$

no acceleration
terminal velocity

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

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

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

energy lost $\frac{1}{2}mv_A^2 - \frac{1}{2}mv_B^2$

$\frac{1}{2}(.055)(79.2)^2 - \frac{1}{2}(.055)(69.0)^2 = 41.6 Joules$