#1

(a) $v_x = 5\sqrt{3}$ m/s ; $v_y = -15$ m/s

(b) $X = 15\sqrt{3}$ m ; $Y = 0$

(c) $U = 0$; $K = 15$ J

(d) $t = 3$ s ; $R = 15\sqrt{3}$ m

#2 $\alpha = 10^{-4}$ 1/K

#3 $K = 28$ J

#4 (a) 0.75 m

(b) 350 N ; 700 N

#5 (a) $\frac{8}{\pi}$ m/s

(b) $5.2 \times 10^3 \frac{N}{m^2}$

#6 (a) $0.1\ m/s^2$

(b) $0.1\ m/s$

(c) $K = 0.005\ J$

#7 (a) $1000\ m/s$

(b) $4990\ J$

#8 (a) $2.5\ J$

(b) $\approx 57^\circ$

(c) $\approx 167\ N$

#9 $N = 1300\ N$; $F = 329\ N$
