P # 9

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- Find a:

$V_f = 18.0\ m/s$
$V_o = 0\ m/s$
$d = 9.20\ m$

$V_f^2 = V_o^2 + 2a \cdot (d - d_o)$

$(18.0\ m/s)^2 = 0 + 2a \cdot (9.20\ m)$

$a = 17.6\ m/s^2$

Find F_{net}:
$a = 17.6\ m/s^2$
$m = 80.0\ kg$

$F_{net} = m \cdot a$

$= (80.0\ kg)(17.6\ m/s^2)$

$F_{net} = 1410\ N$

P # 11

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$F_1 = 2000\ N$
$F_2 = -1800\ N$
$m = 1000\ kg$

$\Sigma F = 2000\ N - 1800\ N$

$\Sigma F = 200\ N$

a) $a = ?$

$F_{net} = m \cdot a$

$200\ N = (1000\ kg) \cdot a$

$\boxed{a = .20\ m/s^2}$

b) $a = .20\ m/s^2$
$t = 10.0\ sec$
$V_0 = 0\ m/s$
$d = ?$

$d = d_0 + v_0 \cdot t + \frac{1}{2} \cdot a \cdot t^2$

$= 0m + (0m/s)(10s) + \frac{1}{2}(.2m/s^2)(10s)^2$

$\boxed{d = 10\ m}$

c) $V_0 = 0m/s$
$a = .20m/s^2$
$t = 10.0\ sec$
$V_f = ?$

$V_f = V_0 + a \cdot t$

$= (0m/s) + (.20m/s^2)(10\ sec)$

$\boxed{V_f = 2\ m/s}$