DYNAMICS NET FORCE - Quiz

NAME: _____ DATE: _____

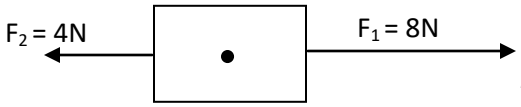
List of Potentially Useful Equations:

$$v_2 = v_1 + a\Delta t \qquad \Delta d = v_1\Delta t + \frac{1}{2}a\Delta t^2 \qquad v_{av} = \frac{\Delta d}{\Delta t} = \frac{v_1 + v_2}{2}$$

$$v_2^2 = v_1^2 + 2a\Delta d \qquad F_{net} = \Sigma F = ma$$

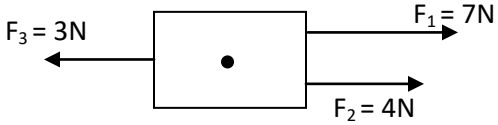
1. [6 marks] Find the missing quantity in each question. [must show your work]

a)



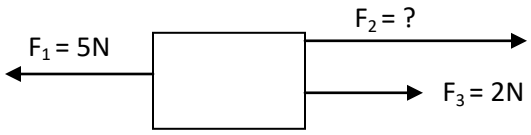
m = 10 kg $a = ?$

b)



m = 5 kg $a = ?$

c)



$a = 4$ *m/s/s [right]*

m = 8 kg

2. [4 marks] The driver of a 1000 kg car presses the accelerator (gas peddle) causing the engine to exert a forward force of 1200 N on the car. Air resistance exerts a force of 80 N on the car and road friction exerts an additional force of 60 N on the car. If the car started from rest, how long will it take to reach 24 m/s?