PFC2 Chapter 3 Section 2 Guided Reading

1. State Newton's second law as a mathematical equation.

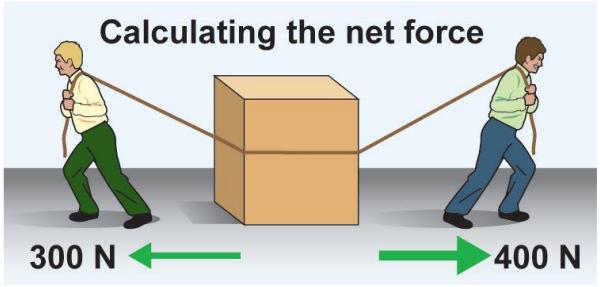
2. Using Newton's second law, explain what happens to the acceleration if you triple the force applied to an object. Assume the object's mass is constant.

3. Using Newton's second law, explain what happens to the acceleration of an object if you triple its mass. Assume the force acting on the object stays constant.

4. Why is it more difficult to get a fully loaded shopping cart moving that to get an empty cart moving?

5. Write down the four guidelines for applying Newton's second law. They are found near the top of page 60.

6. Suppose the worker in the yellow shirt in the picture below turns to face the opposite direction, unties his rope, and pushes on the box. If he pushes with a force of 300 newtons, what is the net force on the box? Assume that the force provided by the worker in the green shirt remains constant.



7. Fill in the chart below to show the units to use when solving physics problems involving force in newtons.

measurement	unit		measurement	unit
force			time	
mass			velocity	
distance			acceleration	

8. Fill in the chart below to show the three forms of Newton's second law.

Use…	**…if you want to find…**	**…and you know…**
$a = F/m$		
	force (F)	
		acceleration (a) and force (F)

9. A 1,200-kilogram car accelerates at a rate of 2 m/s^2. What is the net force acting on it?

10. Force is the action through which _____ moves.