Name _____   Date _____   Period _____

Semester Exam Review (part 2)

1. What will happen to the objects after the forces below are applied?

Bigger force
100N

Smaller force
60N

a.   Zambrano driving this truck, Balanced or unbalanced?   Unbalanced

b.   In which direction will it move?
     To the right

c.   What will be the net force?

100N – 60N = 40 N

3N

2N

5N

a.   The blue square. Balanced or unbalanced?
     Balanced

b.   In which direction will the object move?
     It will not move

c.   What will be the net force? zero

77 N

35 N

58 N

a) Ortiz pulls a heart, balanced or unbalanced?
   Unbalanced
b) In which direction will the object move?
   To the right
c) What will be the net force?
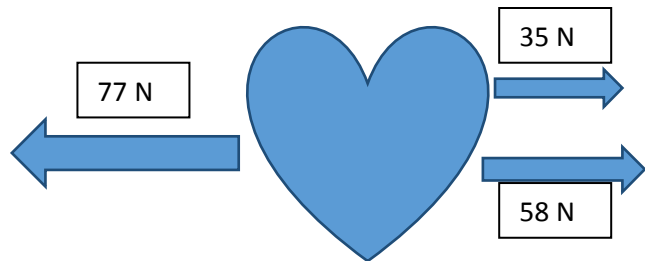
93 – 77 = 16N

2. <u>Define</u> the following vocabularies and <u>provide one example</u> for each definition

Definition	Example
Speed - The rate of Distance and time (distance divided by time)	Mr. Cazares chasing Jaime at <u>30 km per hour</u>.
Velocity- Speed with direction	Zambrano walking at <u>2 km per hour</u> <u>North</u> towards the library.
Acceleration- A change in speed, OR a change in direction, OR both (a change in speed AND direction)	Salas walking <u>North</u> with Zambrano at <u>2 km per hour</u>, but he <u>turn West</u> and he <u>speeded up</u> because the bell rang

3. Which person is the fastest?

Person	Distance	Time	Speed
Gilbert dribbling the ball faster than Ronaldo	36 m	0.6 sec	60 m. / sec
My grandma running a Marathon	96 m	0.8 sec	120 m. / sec
Drama queen falling at the end of the race	660 m	30 sec	22 m. / sec

4. L label and explain the following diagram
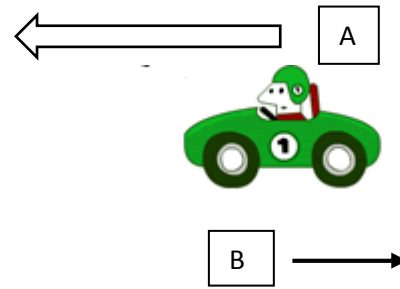

   a. Balanced or unbalanced?
      Unbalanced
   b. What is causing force "A" ?

      Motor trust
   c. What is creating force"B"
      Friction
   d. In which direction will the car move?
      To the left

5. The 1st Isaac Newton's Law of motion states that.. An object at rest will remain at rest, an object in motion will stay in motion, unless an unbalanced force acts upon the object

6. What is the nickname of the fist law of motion?
   The law of inertia

7. Describe the speed of the object displayed in the following distance over time graph
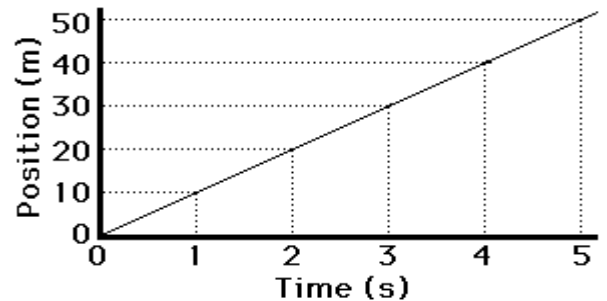
   It has constant speed (we can tell due to the diagonal line)

8. What will be the speed of the object at 3 seconds? (use the speed formula using the 3 steps)
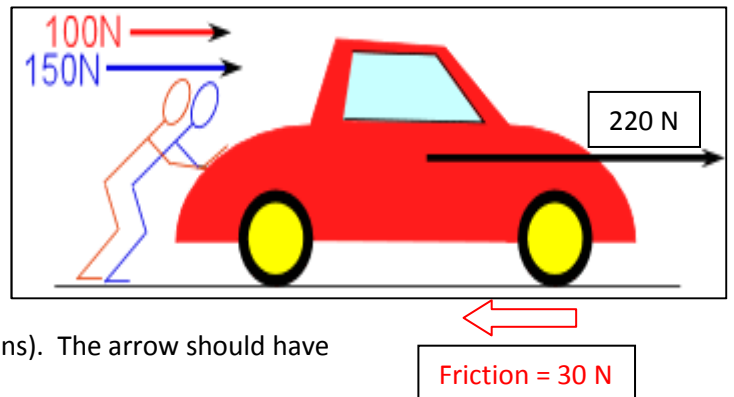
   S= D / T   S= 30m/3s   S= 10 m/s

9. What will be the average speed of the object? (use the speed formula using the 3 steps)
   Average speed = Total distance /total time   AS = 50m/5s=   AS = 10 m/s

10. The total force of the car movement is different from the forces being added. What is affecting the total force?

    Friction is slowing the car down

11. Draw an arrow representing the forces affecting the movement of the car (with proper amounts of Newtons). The arrow should have proper direction
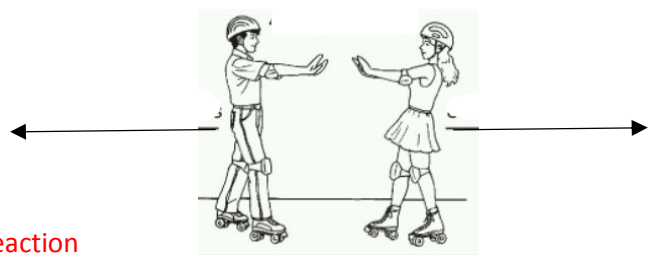
    Friction = 30 N

12. Two skaters pushing will cause them to move away from each other. What law of motion is this example related to?   The 3rd law of motion

13. What is the nickname of this Law?

    The law of action and reaction

       - The push (force) is the action
       - The movement away is the reaction

14. Explain the different laws of motion involved in this picture

    a) 1st law (law of inertia) - The rocket was at rest on the floor but now is moving due to the unbalanced force created by the thrust

    b) 2nd law (law of force, mass, and acceleration)- The thrust (force) required to create an acceleration (movement) must be bigger than the weight (mass) of the rocket

    c) 3rd law (law of action and reaction)- The push created by the thrust of the rocket (action) is followed by the upward movement (reaction)
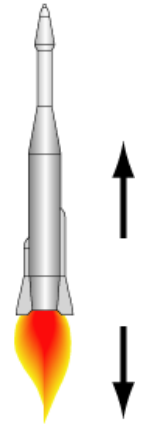
15. Describe what is happening to the motion of the objects (the car and the person) in these two pictures

Picture 1. The car and person are moving forward

Picture 2. The car had a sudden stop and the person kept going forward and broke the windshield since she doesn't have a seatbelt
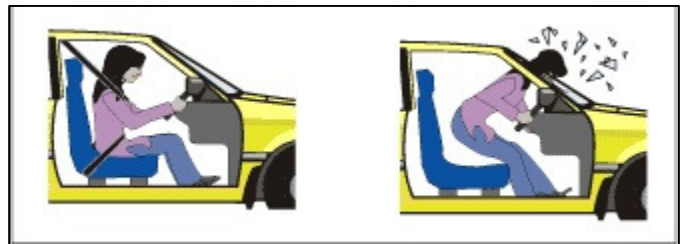
What is the nick name of this law?   The law of Inertia

16. Will the wall move after all the forces applied by the boy? No

17. Is this an example of balanced or unbalanced forces? Balanced forces because the object (wall) is not moving

18. If the boy is pushing with 300 N of force, with what amount of force is the wall pushing back?
The wall is pushing back with the same amount of force (300 N), that is why the forces are balanced

19. Draw the arrows at the bottom of the picture showing the forces (and amounts) involved.

The guy is pushing with 300 of force

The wall is pushing back with 300 N of force

Since the forces are balanced, the object does not move