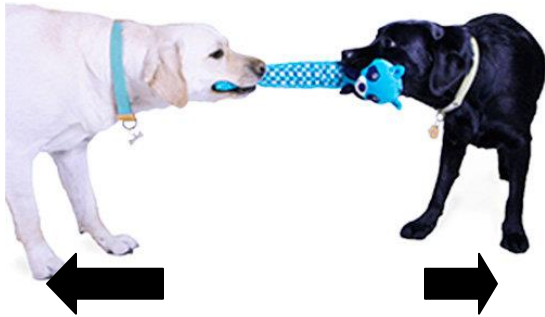


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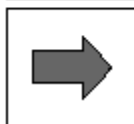
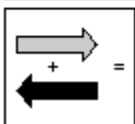
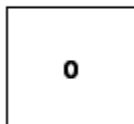
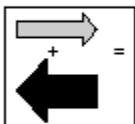
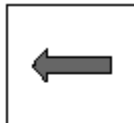
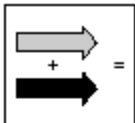
Date _____ Period _____

Unit 6 Force and Motion Test Review

1. What is a force?
2. What is the difference between **balanced** and **unbalanced** forces?
3. **Draw** a situation where the forces are balanced. Make sure your diagram is labeled.
4. **Draw** a situation where the forces are unbalanced. Make sure your diagram is labeled.
5. What is net force?
6. If my dog, Fido, is pulling a rope with a force of 80N to the left and my friend's dog, Lucy, is pulling on the opposite end with a force of 30N to the right, what is the **net force** of the rope? What **direction** is the rope being pulled in?



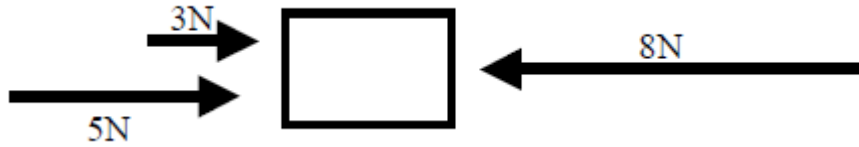
7. Match the left column to the correct answer in the right column. Describe the forces in each box on the left, and explain the resultant forces on the right.



Name _____

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8. Three forces act on a box that is initially at rest as shown below. Determine the **net force** acting on the crate and describe the resulting motion of the crate.



9. Five different forces act on an object. Is it possible for the net force on the object to be zero? **Explain.**

10. What three things can happen to an object when an unbalanced force acts on it?

11. What is Inertia? Give an example.

12. Compare the inertia of an object with a smaller mass to the inertia of an object with a larger mass.

13. Newton's Laws of Motion

Newton's Law of Motion	Word Description of Example	Formula/Example/Image
First Law of Motion		
Second Law of Motion		
Third Law of Motion		

Name _____

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14. Explain the following scenarios in terms of Newton's Laws of Motion:

- a. Justice was riding his bike and ran into a parked car. He was thrown off the bike when he hit the parked car.
- b. Aditya plays baseball and throws a pitch to the batter. The batter hits the ball back to the pitcher's mound.
- c. An iguana has more trouble pushing a boulder than a pebble.
- d. You jump higher when you give more thrust to your legs.
- e. A student dove off the back of a motionless boat and the boat moved forward.
- f. When you jump off of a moving swing, it keeps on going.

15. What are two ways you can increase the acceleration of an object?

- 1.
- 2.

16. Explain what is gravity is.

17. How does friction affect an object's motion?

18. Which forces would eventually cause a rolling ball to come to a stop?

19. A 250 kg trailer is being pulled by a truck. The force causes the trailer to accelerate at 4 m/s^2 . What is the net **force** that causes this acceleration? **Show your work-don't forget units!**

Name _____

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20. Hannah uses a force of 60 N to move a 30 kg bag of equipment. What is **acceleration** of the bag? **Show your work-don't forget units!**

21. Johnny's balloon car travels a distance of 200 cm in 50 s. What is the balloon car's **speed**? **Show your work-don't forget units!**

22. Mandy's balloon car travels at a speed of 20 m/s for 10 s. What is the **distance** that the balloon car traveled? **Show your work-don't forget units!**

23. What is the difference between speed, velocity, and acceleration?

24. Create a graph that shows constant speed. What is constant speed?

25. Create a graph that shows an object at rest.

26. Create a graph that shows two runners running at a constant speed; one running slightly faster than the other.

27. Create a graph that shows an object gradually speeding up.

28. Create a graph that shows a student riding their bike home from school. After 5 minutes it starts to rain lightly, so the student rides a little faster. After another 2 minutes it starts to rain hard, and the student speeds the rest of the way home. The total time the student takes to get home is 10 minutes.