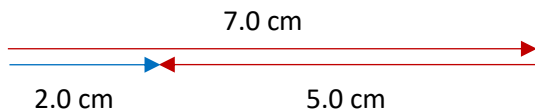## Forces

1. A force is a push or a pull. _____

2. Two forces acting in the same direction will add together. _____

3. Two forces acting in opposite directions also add together _____ , but you must pay attention to the direction of each force.

4. Adding two forces in opposite directions is the same as adding a positive number and a negative number _____ .

5. For two unequal forces in opposite directions, the result is a smaller force acting in the same direction as the _____

    direction of the larger force _____ .

6. Two equal forces in opposite directions are called balanced forces _____ .

7. Describe how balanced forces would change the motion of an object. Balanced forces do not change the motion _____

    of an object _____ .

8. To change the motion of an object requires unbalanced forces _____ .

9. Use a ruler to construct two forces acting in the same direction. One force should be 5.0 cm and the other should be 7.0 cm. Construct a third arrow showing the result of the addition of the first two forces. Make sure the length and direction of the third arrow reflect the correct summation of the first two forces.

    5.0 cm   7.0 cm

    12 cm

10. Use a ruler to construct two forces acting in opposite directions. One force should be 7.0 cm and the second should be 5.0 cm in the opposite direction. Construct a third arrow showing the result of the addition of the first two forces. Make sure the length and direction of the third arrow reflect the correct summation of the first two forces.

    7.0 cm

    2.0 cm   5.0 cm

11. Explain why the directions for questions 9 and 10 above required you to make sure both the length and the direction of the arrows reflect the correct summation of the forces.

    Forces are vectors and therefor have both size (magnitude) and direction. _____

    _____

    _____