Name Period Date

Combining Forces

5N 5N 10N+ =

Two forces can add together to produce a larger net force than either original force.

5N 10N 5N

+ =

Two forces can subtract to produce a net force in the direction of the larger force.

5N 5N = 0

Forces may cancel each other and produce no net force.

Often, more than a single force acts on an object at one time. The

combination of all forces acting on an object is called the net force.

The net force determines whether an object moves and also in which

direction it moves.

When forces act in the same direction, the net force can be found by

adding the strengths of the individual forces. In the Figure, the lengths

of the two arrows, which represent two forces, are added together to

find the net force.

When forces act in opposite directions, they also combine to produce

a net force. However, you must pay attention to the direction of each

force. Adding a force acting in one direction to a force acting in the

opposite direction is the same as adding a positive number to a negative

number. So when two forces act in opposite directions, they combine

by subtraction. The net force always acts in the direction of the greater

force. If the opposing forces are of equal strength, there is no net force.

There is no change in the object’s motion.

1. What is a net force?

2. How do you find the net force when two forces are acting in the same direction?

3. How do you find the net force when the two forces are acting in different directions?

4. Can a force be a negative number? . Which sentence best supports your answer?

5. Draw a picture showing something you learned from this reading.