

L. N. Coakley Science Department

Forces, Types of Forces and Net Force Worksheet.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Grade: \_\_\_\_\_

Watch the video and answer the following questions about forces.

<https://youtu.be/xxK8N23nx9M?list=PL9iouNCPbCxUrQkFLoPwB67nDbhw2NfAO>

1. Which of the following statement best define the concept of force?
  - A push or a pull upon an object.
  - Only a pull.
  - A push or a pull upon an object due to the interaction with another object.
  - All of the above.



2. Complete the following statement about forces.

A force is a \_\_\_\_\_ quantity, it means that they have both \_\_\_\_\_ and \_\_\_\_\_. The S.I. unit of force is \_\_\_\_\_. The forces are divided in two main categories these are \_\_\_\_\_ in which the two objects are physically touching, such as \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ forces. The other category is \_\_\_\_\_ in this case the two objects are physically separated, such as \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ forces.

3. Watch the video and say true (T) or false (F), to the following statements:

<https://youtu.be/PL8ATKipoB4?list=PL9IouNCPbCxUrQkFLoPwB67nDbhw2NfAO>

(T) / (F)

- a) \_\_\_ / \_\_\_ The force is a scalar quantity only has magnitude but not direction.
- b) \_\_\_ / \_\_\_ The gravitational force is a type contact force.
- c) \_\_\_ / \_\_\_ The Electrostatic force, the magnetic force and the gravitational force are examples of non-contact forces.



d) \_\_\_ / \_\_\_ The normal force upon an object is in the same direction to the gravitational force acting on this object.

e) \_\_\_ / \_\_\_ The normal force upon an object is in opposite direction to the gravitational force acting on this object.

f) \_\_\_ / \_\_\_ The normal force ( $N$ ) and the gravitational force ( $F_g$ ) acting on an object who is at rest are unbalance forces and the Net force is  $\neq 0$ .

g) \_\_\_ / \_\_\_ The pushing or pulling force acting upon an object that is at rest are balance forces, and the Net force is  $= 0$ .

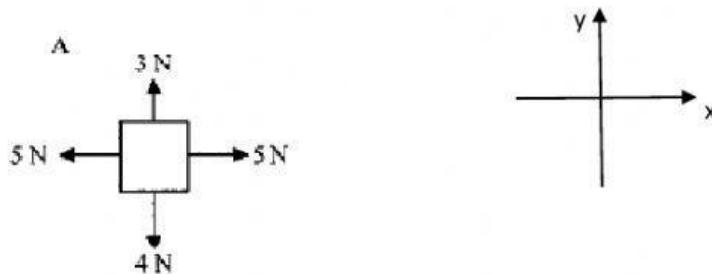
h) \_\_\_ / \_\_\_ The normal force ( $N$ ) and the gravitational force ( $F_g$ ) acting on an object who is moving at constant velocity over a surface and is not experiencing any vertical motion is an example of balance forces and the Net force is  $= 0$ .

i) \_\_\_ / \_\_\_ The normal force ( $N$ ) and the gravitational force ( $F_g$ ) acting on an object who is increasing its velocity while is moving over a horizontal surface and is not experiencing any vertical motion is an example of unbalance forces and the Net force is  $\neq 0$ .

4. The diagram bellow shows the free diagram of some forces acting on an object.

a) What is the net force in the x axis? \_\_\_ N, \_\_\_\_\_.

b) What is the net force in the y axis? \_\_\_ N, \_\_\_\_\_.

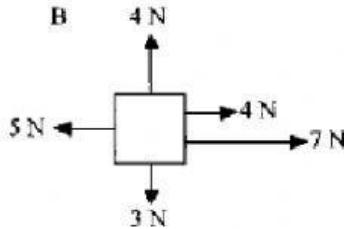


c) Are balance forces acting on the x axis? Yes \_\_\_\_\_. No \_\_\_\_\_.  
 d) Why? \_\_\_\_\_.

5. The diagram bellow shows the free diagram of some forces acting on an object.

a) What is the net force in the x axis? \_\_\_\_\_ N, \_\_\_\_\_.

b) What is the net force in the y axis? \_\_\_\_\_ N, \_\_\_\_\_.



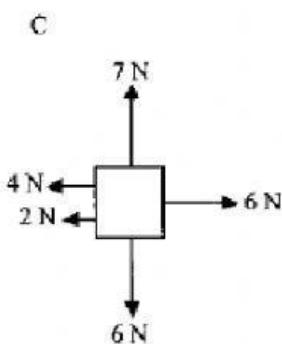
c) Are unbalance forces acting on the y axis? Yes \_\_\_\_\_. No \_\_\_\_\_.

d) Why? \_\_\_\_\_.

6. The diagram bellow shows the free diagram of some forces acting on an object.

a) What is the net force in the x axis? \_\_\_\_\_ N, \_\_\_\_\_.

b) What is the net force in the y axis? \_\_\_\_\_ N, \_\_\_\_\_.



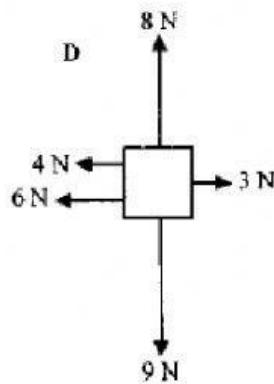
c) Are balance forces acting on the x axis? Yes \_\_\_\_\_. No \_\_\_\_\_.

d) Why? \_\_\_\_\_.

7. The diagram bellow shows the free diagram of some forces acting on an object.

a) What is the net force in the x axis? \_\_\_\_\_ N, \_\_\_\_\_.

b) What is the net force in the y axis? \_\_\_\_\_ N, \_\_\_\_\_.



c) Are unbalance forces acting on the x axis? Yes \_\_\_\_\_. No \_\_\_\_\_.

d) Why? \_\_\_\_\_.

8. The diagram shows a submarine moving in the direction of the arrow



8.1 What term is used for the force acting against the motion of the submarine?

- a) Thrust
- b) Drag
- c) Up-thrust
- d) Weight

9. Force diagrams A, B, C and D (not drawn to scale) represent the forces acting on four objects.

What force diagram shows a net force of 1 N, in the direction of north, acting on the object?

