

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) A push or a pull upon an object.
 - B) Only a pull.
 - C) A push or a pull upon an object due to the interaction with another object.
 - D) 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=PL9louNCPbCxUrQkFLoPwB67nDbhw2NfAO>

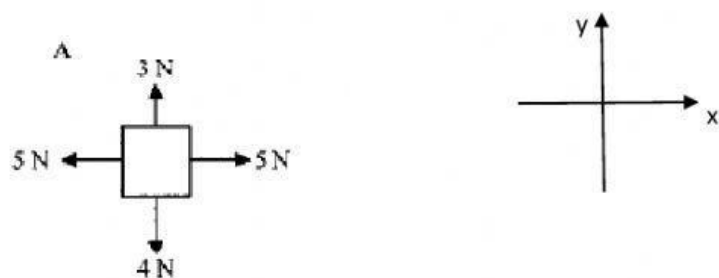
(T) / (F)

- 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 experimenting 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 experimenting 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, ____.

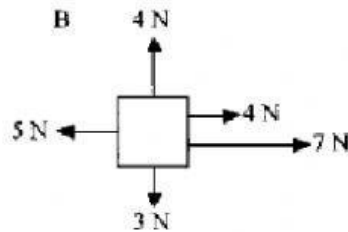


- c) Are balance forces acting on the x axis? Yes _____. No _____.
- d) Why? _____.

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, ____.



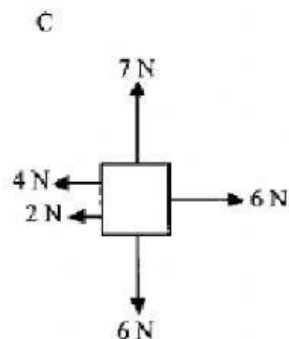
c) Are unbalance forces acting on the y axis? Yes _____. No _____.

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, ____.



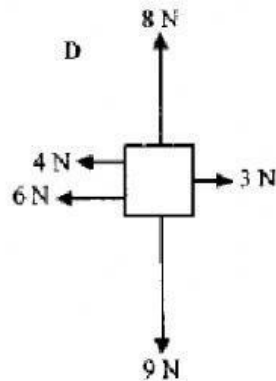
c) Are balance forces acting on the x axis? Yes _____. No _____.

d) Why? _____.

7. The diagram below 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?

