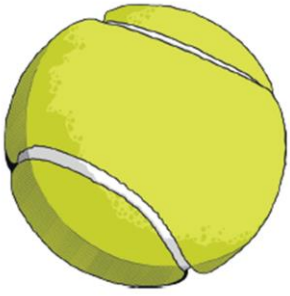
Greek Orthodox Patriarchate School
International - Fuhies

Worksheet 1

Name:_____ **Grade 7**

Question one Add force arrows to the diagrams below. Label the arrows with the force and add a description that says whether the forces are balanced or unbalanced.

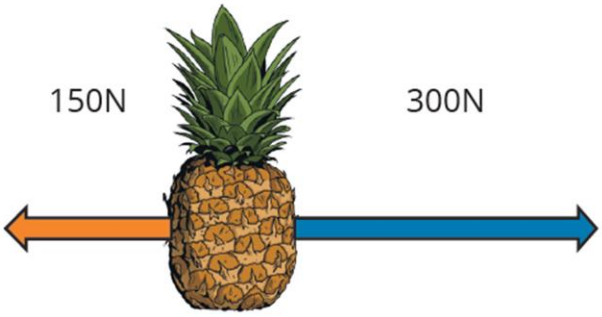
A person sitting on a chair.



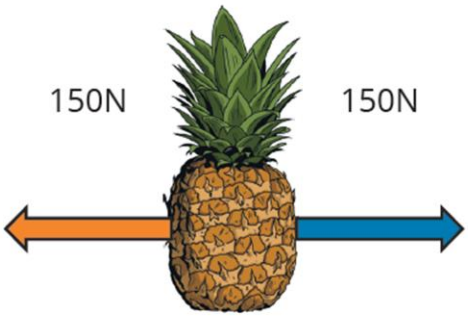
A ball falling downwards

Question two the diagrams below show the forces acting on a stationary object calculate the resultant force and state the direction of the movement.

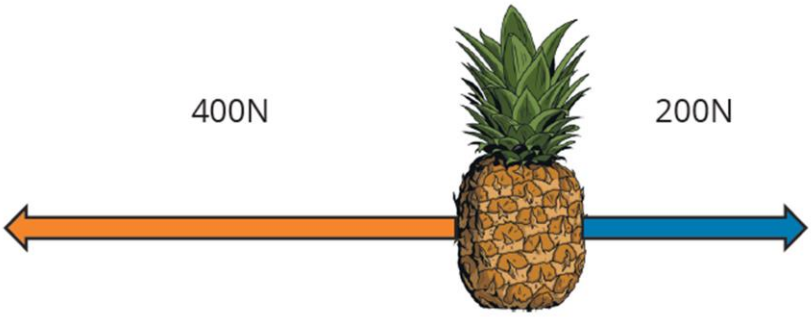
a)



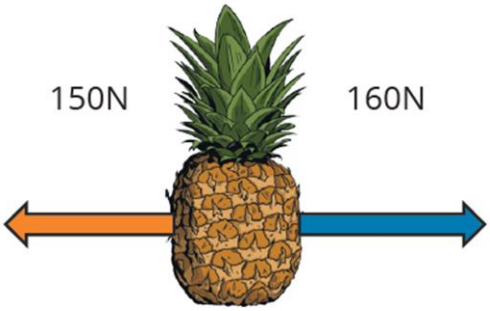
b)



c)



d)



Question three

A box is pulled along a wooden floor with a force of 300N. An initial resistive force acts in the opposite direction to the box with a magnitude of 135N.

a) What is the name of the equipment used to measure the pulling force?

_____

b) What is the name of the resistive force?

_____

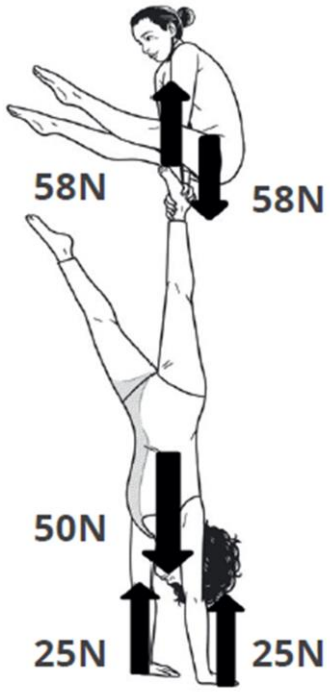
c) Draw a force diagram to show these two forces acting on the block. Label the arrows with the size of the force.

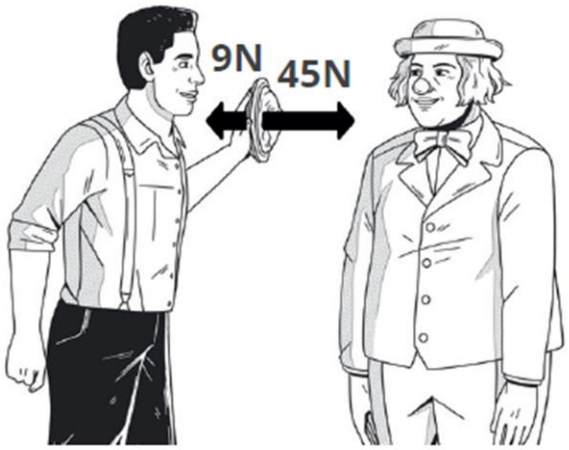
d) What is the effect of the forces on the motion of the box?

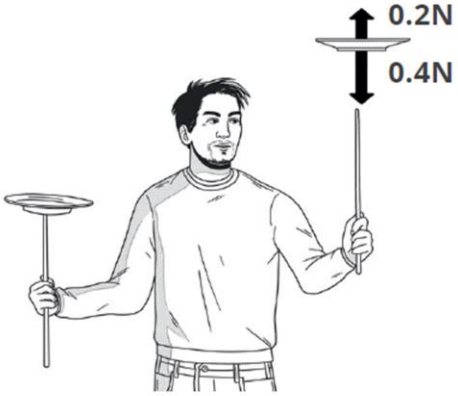
_____

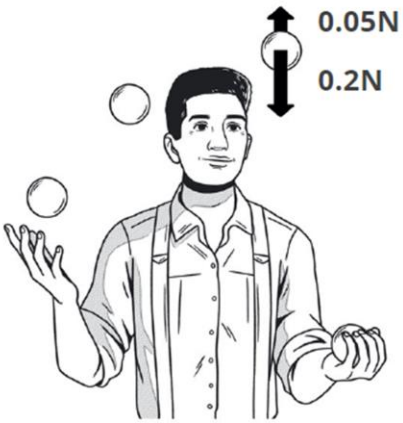
_____

Question Four: State whether the forces acting on the objects are balanced or unbalanced and calculate the resultant force and state the direction









Question five: Imagine you are sitting in a boat on a lake. Draw a force diagram showing the forces acting on the boat and answer the following questions

a) **Why your boat is not sinking?**

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b) **Why does a stone sink when it falls in a river?**

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c) **You hit a rock and stop. You see that there is a hole in your boat and the water is coming in. Explain in terms of forces, what will happen to your boat if you don't block the hole.**

Teacher:Roba Alamat

Question six

At a party, three balloons are filled with a gas less dense than air. The balloons are tied to an empty drink can. The can floats, without moving, in the air above a table, as shown in Fig. 4.1.

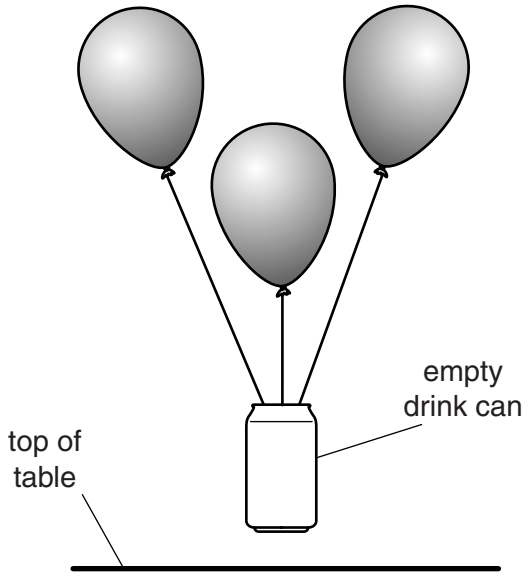

Fig. 4.1

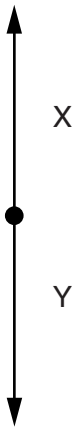

Fig. 4.2

(a) Fig. 4.2 represents the vertical forces acting on the can as it floats in the air.

State the name given to the downward force labelled Y.

.....[1]

(b) In terms of the vertical forces acting on the can, explain why the can does not rise or fall.

.....

.....[2]

Question seven

(a) An aeroplane is flying horizontally at a steady speed in a straight line.

Fig. 3.1 shows three of the four forces acting on it.

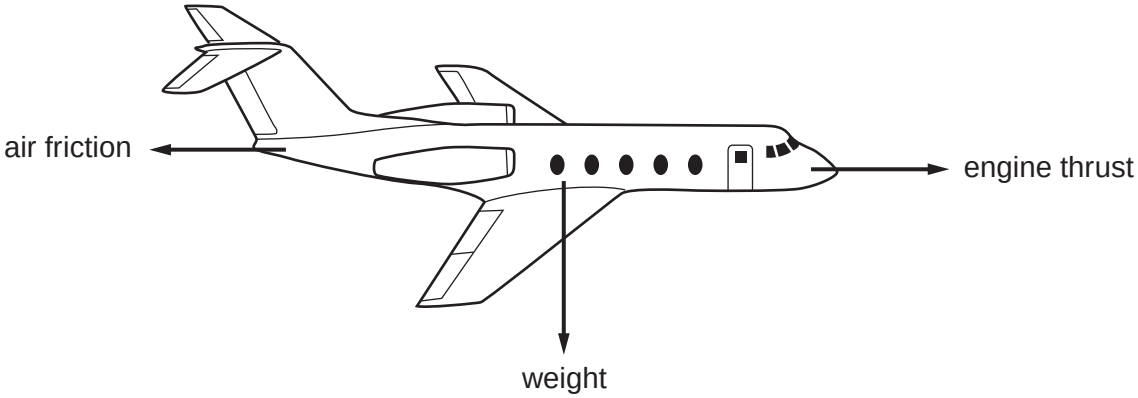

Fig. 3.1

(i) In order to fly horizontally at a steady speed, which two of the forces shown on the aeroplane **must** be equal?

..... and ..... are equal. [1]

(ii) In order to fly horizontally in a straight line, there must be a fourth force acting on the plane.

Draw an arrow on Fig. 3.1 to represent this force. [1]