

Science Revision 3

1) This question is about gravity, mass and weight.

Look at the table showing the mass and weight of an object on different planets.

| planet | mass of object in | weight of object in |
|----------|-----------------------------------|-------------------------------------|
| W | 20 | 200 |
| X | 20 | 2000 |
| Y | | 1000 |
| Z | 20 | |

(a) Complete the table headings by writing the name of the unit for:

- mass
- weight.

[2]

(b) Mass and weight have different units.

Write down **one other** difference between mass and weight.

[1]

(c) What is the mass of the object on planet Y?

Write your answer in the table.

[1]

2. Look at these two force diagrams for a spacecraft.

One diagram shows the spacecraft leaving the surface of the Moon.

The other diagram shows the spacecraft leaving the surface of the Earth.

leaving the surface of the Moon

leaving the surface of the Earth



(a) In both diagrams the mass of the spacecraft is the same.

What is the name for the unit of mass? _____

(b) The weight of the spacecraft on the Moon is different from its weight on the Earth.

Explain why.

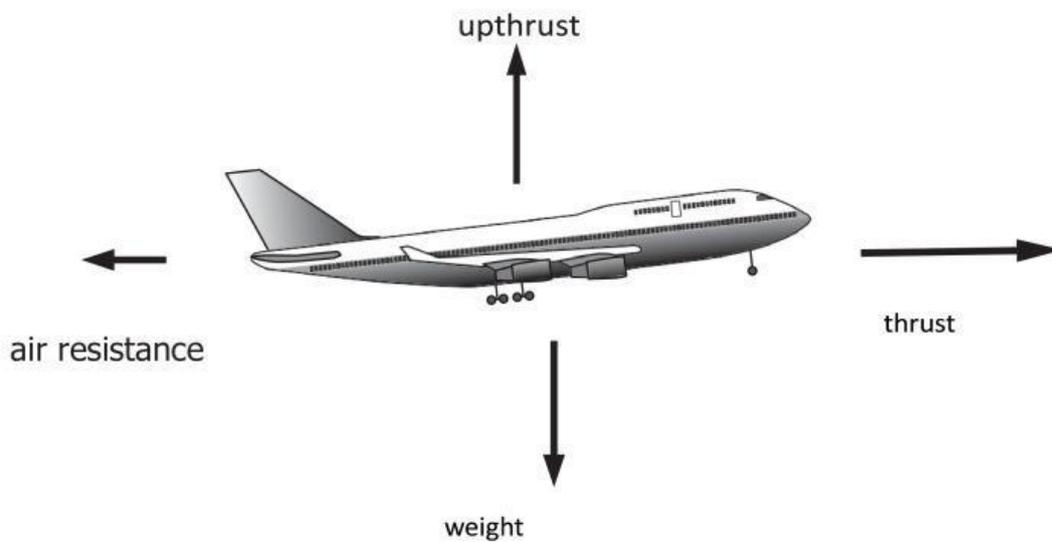
(c) What is the name for the unit of weight?

_____ [1]

(d) Explain why the spacecraft leaving the Moon moves upwards faster than when it leaves the Earth. Give a reason

[1]

3. The diagram shows the forces acting on an aeroplane.



Which force is the effect of gravity on the mass of the aeroplane?

4. Why were there no people to observe the formation of the solar system?

5) List two pieces of evidence that scientists use to support the theory that all planets Formed in a similar way.

6) How do computer models help scientists understand how the solar system formed?

7) What is a "hypothesis" in science?

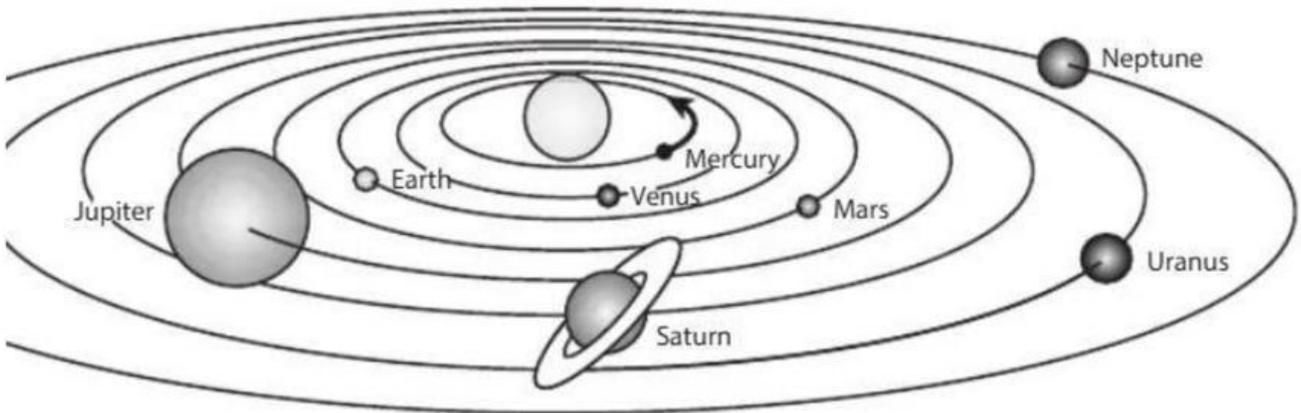
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8) **State if the following statements are True or False:**

- 1- Mass can change depending on your location in the universe.
- 2- Weight is the force of gravity acting on an object.
- 3- An object's mass changes depending on where it is.
- 4- The Moon has weaker gravity than Earth.
- 5- The more mass an object has, the greater its gravitational pull.
- 6- Gravity pulls objects away from the center of the Earth.

7- An object's weight can be zero in space, but its mass will never be zero.

The diagram shows the orbits of the planets around the Sun.
The direction of the orbit of Mercury is shown with an arrow.



Draw arrows on the orbits of the other planets to show the direction that they move.

a Read this statement.

Scientists think that the Solar System formed from a cloud of dust and gas.

Which word describes this statement?

Underline the correct answer.

measurement hypothesis investigation observation

b Name the force that pulls particles of dust and gas together in space.

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Multiple Choice Questions:

- 1) What do scientists use to develop theories about events that happened a long time ago, like the formation of the solar system?
 - A) Personal opinions
 - B) Evidence from observations and experiments
 - C) Science fiction books
 - D) Religious texts
- 2) 2. In what direction do all the planets in our solar system orbit the Sun (except Venus and Uranus)?
 - A) Different directions
 - B) The same direction
 - C) Backwards
 - D) Randomly
- 3) What do scientists use to represent something that is difficult to observe directly, such as the formation of a solar system?
 - A) Telescopes
 - B) Computer models
 - C) Drawings
 - D) Experiments in a lab
- 4) What force caused the dust and gas in the early solar system to clump together?
 - A) Wind
 - B) Magnetism
 - C) Gravity
 - D) Friction

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