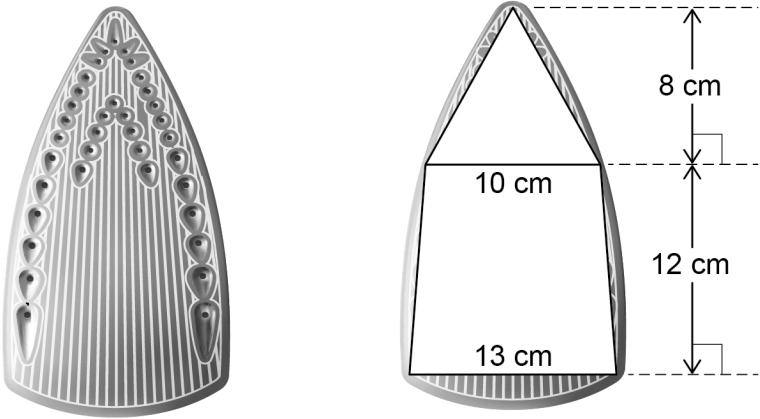


1

Ralf has an iron.
He models the base as a triangle joined to a trapezium.

Not drawn accurately



1 (a)

The iron applies a force of 25 newtons (N)

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Work out the pressure using Ralf’s model.

[4 marks]

Answer _____ N/cm²

- 1 (b)** Is the actual pressure greater than, equal to or less than your answer to part (a)?

Tick **one** box.

☐

greater than

☐

equal to

☐

less than

Give a reason for your answer.

[2 marks]

2

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

The mass is divided by 2 and the volume is multiplied by 4

What happens to the density?

Circle your answer.

[1 mark] $\times 2$ $\div 2$ $\times 8$ $\div 8$

3 Which **one** of these is a unit of density?

Circle your answer.

[1 mark]

cm^2/g

cm^3/g

g/cm^2

g/cm^3

Two objects, J and K, are applying pressure to areas of ground.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

For J, the force is 18.9 newtons and the area is 0.45 m^2

pressure for J : pressure for K = 7 : 8

$$\text{area for J} : \text{area for K} = 9 : 5$$

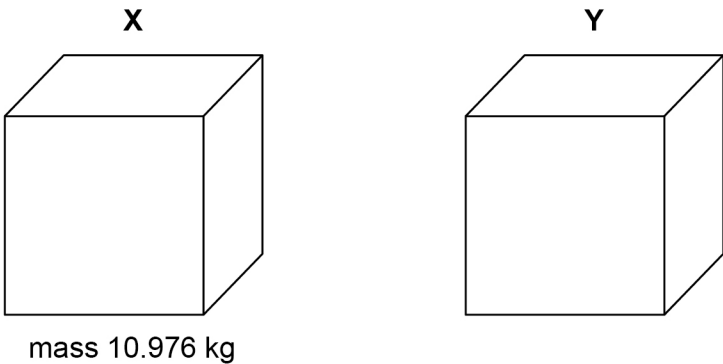
Work out the force for K.

[4 marks]

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Answer newtons

5 Here are two solid cubes, X and Y.
The mass of X is 10.976 kg
The area of **each face** of X is 784 cm²



5 (a) Zayan wants to know the density of Y.
He assumes that Y is identical to X.
What density should he get for Y?
Give your answer in **grams per cubic centimetre**.

[4 marks]

Answer _____ g/cm³

5 (b)

In fact,

the mass of Y is less than the mass of X

the area of each face of Y is greater than the area of each face of X.

What does this mean about the actual density of Y?

Tick **one** box.**[1 mark]**☐

It is less than the answer to part (a)

☐

It is equal to the answer to part (a)

☐

It is greater than the answer to part (a)

☐

It is not possible to tell