



Name: _____ **Date:** _____ **Score:** _____ / 32

1 Pressure = force $\div$ area.

A force of 600 N acts on an area of 2.5 m^2 .

Work out the pressure in N/m^2 .

(2 marks)

Answer _____

2 A crate rests on horizontal ground on a square base of side 0.5 m.

The crate exerts a force of 180 N on the ground.

Work out the pressure on the ground.

Give your answer in N/m^2 .

(3 marks)

Answer _____

3 The pressure on a floor is 45 N/m^2 . The area in contact with the floor is 0.8 m^2 .

Work out the force.

(2 marks)

Answer _____

4 A machine exerts a force of 1200 N on the ground. The pressure is 300 N/m^2 .

Work out the area of ground in contact with the machine.

(2 marks)

Answer _____

5 A force of 150 N acts on a circular base of radius 5 cm.

Work out the pressure in N/cm^2 . Give your answer correct to 2 decimal places.

(3 marks)

Answer _____

6 $1 \text{ m}^2 = 10\,000 \text{ cm}^2$.

a. Change a pressure of 2400 N/m^2 to N/cm^2 .

b. Change a pressure of 0.5 N/cm^2 to N/m^2 .

(2 marks)

Answer _____

7 A solid cube of side 20 cm exerts a force of 160 N on a table. The cube rests on one face.

Work out the pressure on the table in N/m^2 .

(3 marks)

Answer _____

8 A cuboid block has a volume of 0.06 m^3 and a height of 0.3 m. It rests on its base on horizontal ground and exerts a force of 900 N.

Work out the pressure on the ground in N/m^2 .

(4 marks)

Answer _____

9 A concrete slab is a cuboid of width 0.8 m and thickness 0.1 m. It lies flat on the ground and exerts a force of 1440 N. The pressure on the ground is 600 N/m^2 .

Work out the length of the slab.

(4 marks)

Answer _____

- 10** A force of 600 N acts on an area of 0.5 m^2 . Amy says "If the area is increased by 25%, the pressure will decrease by 25%."

Is Amy correct? You must show your working.

(4 marks)

Answer _____

- 11** A metal box rests on horizontal ground on a rectangular base.

The box exerts a force of 480 N on the ground.

The pressure on the ground is 60 N/m^2 .

The width of the base is 2.5 m.

Work out the length of the base.

(3 marks)

Answer _____

End of questions | Total 32 marks