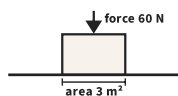


Pressure

ANSWERS 

1

A crate pushes down with 60 N on an area of 3 m². Find the pressure.

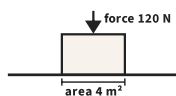


$$\text{pressure} = \frac{\text{force}}{\text{area}} = \frac{60}{3}$$

Answer 20 N/m²

2

A water tank pushes down with 120 N on an area of 4 m². Find the pressure.

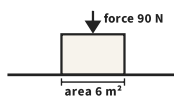


$$\text{pressure} = \frac{\text{force}}{\text{area}} = \frac{120}{4}$$

Answer 30 N/m²

3

A cupboard pushes down with 90 N on an area of 6 m². Find the pressure.

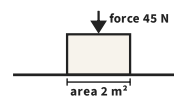


$$\text{pressure} = \frac{\text{force}}{\text{area}} = \frac{90}{6}$$

Answer 15 N/m²

4

A statue pushes down with 45 N on an area of 2 m². Find the pressure.

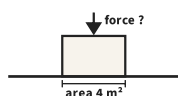


$$\text{pressure} = \frac{\text{force}}{\text{area}} = \frac{45}{2}$$

Answer 22.5 N/m²

5

A pallet puts a pressure of 25 N/m² on an area of 4 m². Find the force.



$$25 = \frac{\text{force}}{4}$$

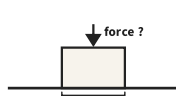
multiply both sides by the area

$$\text{force} = 25 \times 4$$

Answer 100 N

6

A fish tank puts a pressure of 12.5 N/m² on an area of 6 m². Find the force.



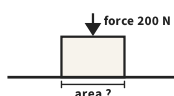
$$12.5 = \frac{\text{force}}{6}$$

$$\text{force} = 12.5 \times 6$$

Answer 75 N

7

A bookcase pushes down with 200 N. The pressure is 40 N/m². Find the area.



$$40 = \frac{200}{\text{area}}$$

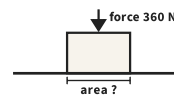
area × pressure = force, so divide

$$\text{area} = \frac{200}{40}$$

Answer 5 m²

8

A piano pushes down with 360 N. The pressure is 45 N/m². Find the area.



$$360 \div 45$$

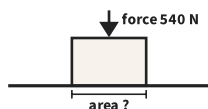
Answer 8 m²

Pressure further practice

ANSWERS 

9

A wardrobe pushes down with 540 N. The pressure is 180 N/m². Find the area.



$$540 \div 180$$

Answer 3 m²

10

Box A pushes down with 240 N on an area of 4 m². Box B pushes down with 350 N on an area of 5 m². Which box puts the greater pressure on the floor?

$$A: 60 \text{ N/m}^2, B: 70 \text{ N/m}^2$$

Answer Box B

11

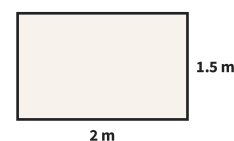
Complete the table.

	Force (N)	Area (m ²)	Pressure (N/m ²)
Desk	150	2.5	60
Bin	40	0.5	80
Bench	360	1.5	240

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

12

A crate pushes down with 720 N. Its base is this rectangle. Find the pressure under the crate.



$$2 \times 1.5 = 3 \text{ m}^2, 720 \div 3$$

Answer 240 N/m²

13

A table pushes down with 360 N. It stands on 4 legs. Each leg touches the floor on an area of 0.02 m². Find the pressure on the floor.

$$4 \times 0.02 = 0.08 \text{ m}^2, 360 \div 0.08$$

Answer 4500 N/m²

14

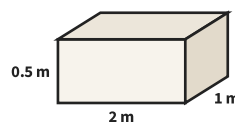
A floor is safe up to a pressure of 2500 N/m². A machine pushes down with 6000 N. What is the smallest area the machine can stand on safely?

$$6000 \div 2500$$

Answer 2.4 m²

15

This crate pushes down with 400 N. It can rest on any of its faces. Find the greatest pressure it can put on the ground.



$$\text{smallest face } 1 \times 0.5 = 0.5 \text{ m}^2, 400 \div 0.5$$

Answer 800 N/m²

16

A box pushes down with 200 N on an area of 4 m². Ali says that if the area is doubled, the pressure will double. Is Ali right? Explain.

$$200 \div 4 = 50 \text{ N/m}^2, 200 \div 8 = 25 \text{ N/m}^2$$

Answer No, it halves