

Pressure Force Area - Worksheet

Skill

Group A - Pressure Work out the pressure:		
1) Force = $100 N$	2) Force = $300 N$	3) Force = $600 N$
Area = $20 m^2$	Area = $20 m^2$	Area = $20 m^2$
4) Force = $120 N$	5) Force = $120 N$	6) Force = $120 N$
Area = $10 m^2$	Area = $30 m^2$	Area = $40 m^2$
7) Force = $400 N$	8) Force = $800 N$	9) Force = $1000 N$
Area = $40 m^2$	Area = $40 m^2$	Area = $40 m^2$
10) Force = $600 N$	11) Force = $600 N$	12) Force = $600 N$
Area = $30 m^2$	Area = $40 m^2$	Area = $120 m^2$

Group B - Force

Work out the force:

1) Pressure = $10 N/m^2$	2) Pressure = $12 N/m^2$	3) Pressure = $18 N/m^2$
Area = $20 m^2$	Area = $20 m^2$	Area = $20 m^2$
4) Pressure = $60 N/m^2$	5) Pressure = $60 N/m^2$	6) Pressure = $60 N/m^2$
Area = $10 m^2$	Area = $20 m^2$	Area = $60 m^2$
7) Pressure = $20 N/m^2$	8) Pressure = $40 N/m^2$	9) Pressure = $70 N/m^2$
Area = $30 m^2$	Area = $30 m^2$	Area = $30 m^2$
10) Pressure = $60 N/m^2$	11) Pressure = $60 N/m^2$	12) Pressure = $60 N/m^2$
Area = $20 m^2$	Area = $50 m^2$	Area = $70 m^2$





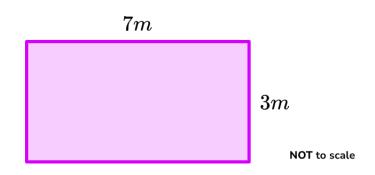
Group C - Area		
Work out the area:		
1) Force = 200 N	2) Force = 500 <i>N</i>	3) Force = 650 <i>N</i>
Pressure = $10 N/m^2$	Pressure = $10 N/m^2$	Pressure = $10 N/m^2$
4) Force = 400 <i>N</i>	5) Force = 400 <i>N</i>	6) Force = 400 N
Pressure = $20 N/m^2$	Pressure = $40 N/m^2$	Pressure = $80 N/m^2$
7) Force = 300 <i>N</i>	8) Force = 150 <i>N</i>	9) Force = 375 <i>N</i>
Pressure = $25 N/m^2$	Pressure = $25 N/m^2$	Pressure = $25 N/m^2$
10) Force = 900 <i>N</i>	11) Force = 900 <i>N</i>	12) Force = 900 <i>N</i>
Pressure = $30 N/m^2$	Pressure = $60 N/m^2$	Pressure = $150 N/m^2$



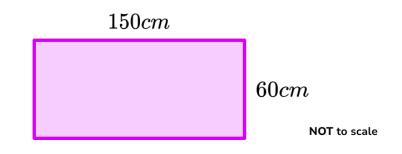
Pressure Force Area - Worksheet

Applied

1) (a) Work out the area of the following shape:



- (b) A force of 630 N acts on the area. Calculate the pressure.
- 2) (a) Work out the area of the shape below. Give your answer in m^2 .



- (b) A pressure of $200 N/m^2$ is exerted onto the area. Calculate the force.
- 3) (a) An area of $50m^2$ has a pressure of $20 N/m^2$ exerted upon it. Calculate the force.
 - (b) The area and the pressure are both doubled. What happens to the force?
- 4) (a) An area of $20m^2$ has a force of 800 N acting upon it. Calculate the pressure.
 - (b) The area and the force both increase by 10%. What happens to the pressure?



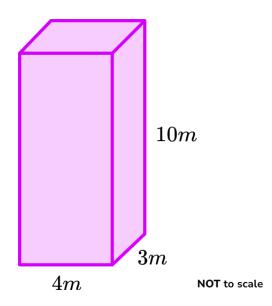
Pressure Force Area - Exam Questions

. Circle your answer.	
96 N 1280 N 5 N 0.2 N	(1 r

2) Work out the area when a force of 4500 Newtons results in a pressure of $90 N/m^2$.

.....m² (2 marks)

A block is resting on the floor.The downward force of the block is 4800 N.



Calculate the pressure.

.....N/m² (3 marks)



	Question	Answer
	Skill Questions	
Group A	Work out the pressure:	
	1) Force = $100 N$, Area = $20 m^2$	1) $5 N/m^2$
	2) Force = $300 N$, Area = $20 m^2$	2) 15 N/m ²
	3) Force = $600 N$, Area = $20 m^2$	3) 30 N/m ²
	4) Force = $120 N$, Area = $10 m^2$	4) $12 N/m^2$
	5) Force = $120 N$, Area = $30 m^2$	5) $4 N/m^2$
	6) Force = $120 N$, Area = $40 m^2$	6) 3 <i>N/m</i> ²
	7) Force = $400 N$, Area = $40 m^2$	7) $10 N/m^2$
	8) Force = $800 N$, Area = $40 m^2$	8) 20 N/m ²
	9) Force = $1000 N$, Area = $40 m^2$	9) 25 N/m ²
	10) Force = $600 N$, Area = $30 m^2$	10) 20 N/m ²
	11) Force = $600 N$, Area = $40 m^2$	11) 15 N/m ²
	12) Force = $600 N$, Area = $120 m^2$	12) $5 N/m^2$
Group B	Work out the force:	
	1) Pressure = $10 N/m^2$, Area = $20 m^2$	1) 200 N
	2) Pressure = $12 N/m^2$, Area = $20 m^2$	2) 240 N
	3) Pressure = $18 N/m^2$, Area = $20 m^2$	3) 360 <i>N</i>
	4) Pressure = $60 N/m^2$, Area = $10 m^2$	4) 600 <i>N</i>
	5) Pressure = $60 N/m^2$, Area = $20 m^2$	5) 1200 N
	6) Pressure = $60 N/m^2$, Area = $60 m^2$	6) 3600 <i>N</i>
	7) Pressure = $20 N/m^2$, Area = $30 m^2$	7) 600 N
	8) Pressure = $40 N/m^2$, Area = $30 m^2$	8) 1200 <i>N</i>
	9) Pressure = $70 N/m^2$, Area = $30 m^2$	9) 2100 <i>N</i>
	10) Pressure = $60 N/m^2$, Area = $20 m^2$	10) 1200 N
	11) Pressure = $60 N/m^2$, Area = $50 m^2$	11) 3000 N
	12) Pressure = $60 N/m^2$, Area = $70 m^2$	12) 4200 N



Group C	Work out the area:	
	1) Force = $200 N$, Pressure = $10 N/m^2$	1) $20 m^2$
	2) Force = 500 <i>N</i> , Pressure = $10 N/m^2$	2) $50 m^2$
	3) Force = $650 N$, Pressure = $10 N/m^2$	3) $65 m^2$
	4) Force = $400 N$, Pressure = $20 N/m^2$	4) $20 m^2$
	5) Force = $400 N$, Pressure = $40 N/m^2$	5) $10 m^2$
	6) Force = $400 N$, Pressure = $80 N/m^2$	6) $5 m^2$
	7) Force = $300 N$, Pressure = $25 N/m^2$	7) $12 m^2$
	8) Force = $150 N$, Pressure = $25 N/m^2$	8) 6 m ²
	9) Force = $375 N$, Pressure = $25 N/m^2$	9) 15 m ²
	10) Force = 900 <i>N</i> , Pressure = $30 N/m^2$	10) $30 m^2$
	11) Force = 900 <i>N</i> , Pressure = $60 N/m^2$	11) $15 m^2$
	12) Force = 900 <i>N</i> , Pressure = $150 N/m^2$	12) $6 m^2$



	Questi	on		Answer
	Appliec	Questions		
1)	b) A for	k out the area of the following shap $7m$ $3m$ NOT to scale rce of 630 N is exerted onto the area ulate the pressure.		a) Area = $21 m^2$ b) Pressure = $30 N/m^2$
2)	your	k out the area of the shape below. C answer in m^2 . 150 cm 60 cm NOT to scale essure of 200 N/m^2 is exerted onto		a) $Area = 0.9 m^2$
	b) Calc	ulate the force.		b) Force = $180 N$
3)		rea of $50m^2$ has a pressure of 20 N/ ted upon it. Calculate the force.	'm ²	a) Force = $20 \times 50 = 1000 N$
		area and the pressure are both doul It happens to the force?	oled.	b) Force = $40 \times 100 = 4000 N$ The force is 4 times larger.
4)		An area of $20m^2$ has a force of 800 N acting upon it. Calculate the pressure.		a) Pressure $=\frac{800}{20} = 40 N/m^2$
		area and the force both increase by . What happens to the pressure?		b) Pressure $=\frac{880}{22} = 40 N/m^2$ The pressure has stayed the same



	Question	Answer	
	Exam Questions		
1)	Work out the force when the pressure is $80 N/m^2$ and the area is $16 m^2$. Circle your answer. $96 N$ $1280 N$ $5 N$ $0.2 N$	1280 N	(1)
2)	Work out the area when a force of 4500 Newtons results in a pressure of 90 N/m^2 .	$Area = 4500 \div 90$ $= 50 m^2$	(1) (1)
3)	A block is resting on the floor. The downward force of the block is 4800 N. 10m 4m NOT to scale	$Area = 4 \times 3 = 12$ $Pressure = 4800 \div 12$ $= 400 N/m^{2}$	(1)(1)(1)
	Calculate the pressure.		

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