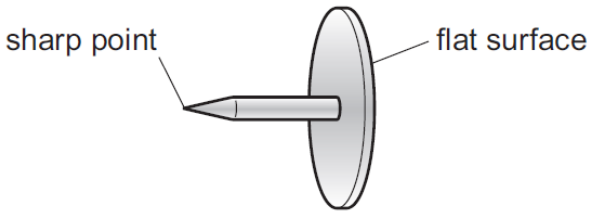
Pressure – 2019 Nov

1. 0625/11,12,13,21,22,23/O/N/19/No.12,13,14

A drawing pin (thumb tack) has a sharp point at one end and a flat surface at the other end.



The pin is pushed into a wooden board.

How do the pressure and the force at the sharp point compare with the pressure and the force on the flat surface?

	force at the sharp point	pressure at the sharp point
A	greater than on the flat surface	greater than on the flat surface
B	greater than on the flat surface	less than on the flat surface
C	the same as on the flat surface	greater than on the flat surface
D	the same as on the flat surface	less than on the flat surface

2. 0625/11/O/N/19/No.13

The table shows four forces. Each force acts on a different surface.

Which row shows the **least** pressure?

	size of the force / N	area of the surface / m^2
A	0.30	0.040
B	10	2.0
C	60	15
D	1200	40

3. 0625/12/O/N/19/No.13

A metal block of weight *W* rests on a table. In order to calculate the pressure that the block exerts on the table, one other quantity must be known.

What is the other quantity?

A the area of contact between the block and the table

B the density of the block

C the mass of the block

D the volume of the block

4. 0625/13/O/N/19/No.13

Pressure is related to force and area.

Which situation **cannot** be explained using this relationship?

A Using a longer spanner than normal to undo a tight nut.

B Hammering a nail into a piece of wood.

C Tractors using wide tyres in a muddy field.

D A sharp kitchen knife cutting vegetables more easily than a blunt one.

5. 0625/22/O/N/19/No.15

The density of mercury is 13 600 kg / m^3.

What is the pressure at the bottom of a column of mercury that has a height of 75.0 cm?

A 1.02×10^4 Pa

B 1.02×10^5 Pa

C 1.02×10^6 Pa

D 1.02×10^7 Pa