Pressure

Question Paper 2

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	Pressure
Booklet	Question Paper 2

Time allowed: **21 minutes**

Score: **/17**

Percentage: **/100**

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	55%	50%	43%	35%	<30%

Which situation is an example of a force acting over a large area to produce a small pressure?

A. a builder hammering a nail into a piece of wood

B. a cook using a sharp knife to cut vegetables

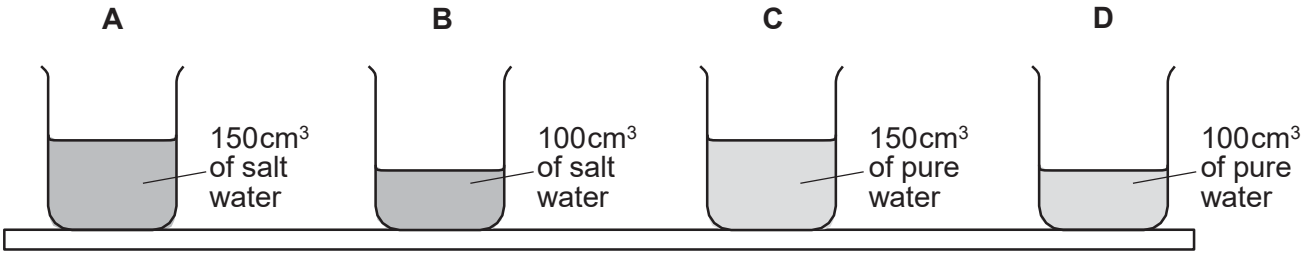
C a nurse pushing a needle into a patient's arm

D a soldier marching in flat-soled boots

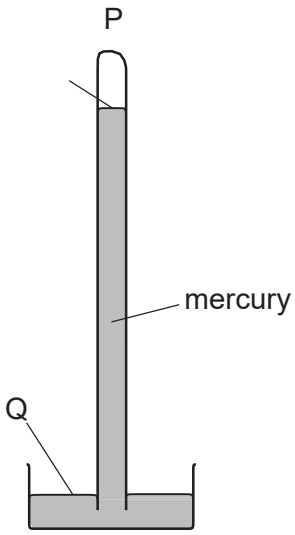
A student places four identical beakers on a bench.

Two beakers contain salt water of density 1.1 g / cm^3 and two beakers contain pure water of density 1.0 g / cm^3.

Which beaker exerts the greatest pressure on the bench?



The diagram shows a simple mercury barometer.

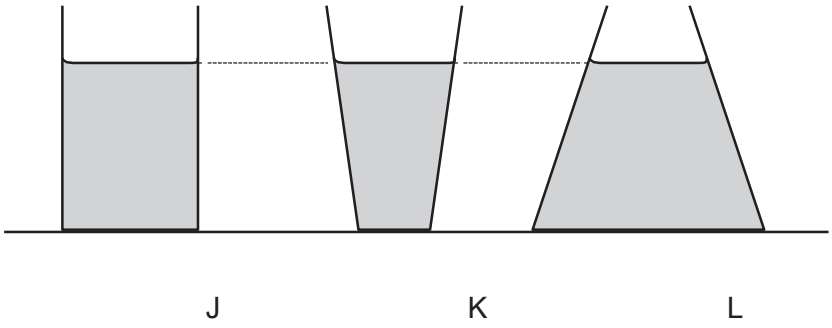


Atmospheric pressure decreases.

What happens to the level of the mercury at P and what happens to the level of the mercury at Q?

	P	Q
A	falls	falls
B	falls	rises
C	rises	falls
D	rises	rises

The diagram shows three different containers J, K and L. Each container contains water of the same depth.



Which statement about the pressure of the water on the base of each container is correct?

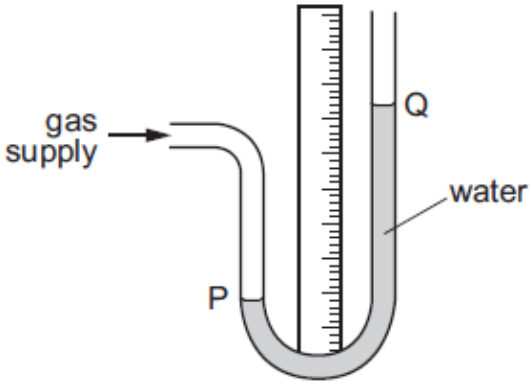
A The water pressure is greatest in container J.

B The water pressure is greatest in container K.

C The water pressure is greatest in container L.

D The water pressure is the same for all three containers.

A water manometer is connected to a gas supply.

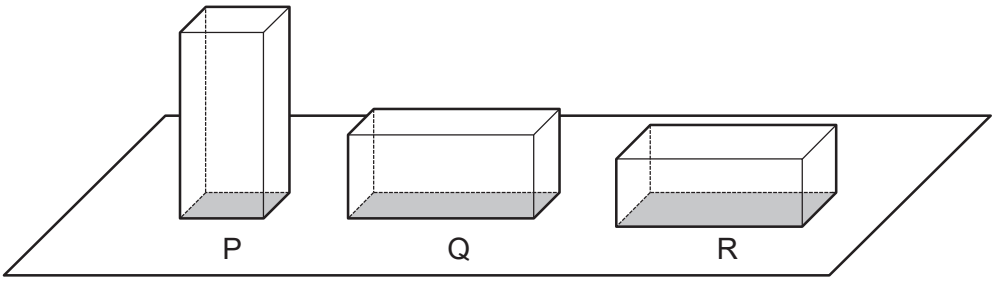


There is a gas leak and the pressure of the gas supply falls.

What happens to the water level at P and what happens to the water level at Q?

	water level at P	water level at Q
A	falls	falls
B	falls	rises
C	rises	falls
D	rises	rises

The scale diagram shows three identical blocks, P, Q and R. The blocks have different areas of contact with the ground.



Which block exerts the greatest pressure on the ground?

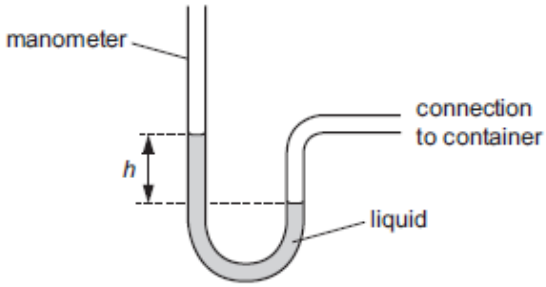
A. block P

B. block Q

C. block R

D. they all exert the same pressure

A manometer is used to measure the pressure of the air in a container.



Which change would give a bigger value of height *h*?

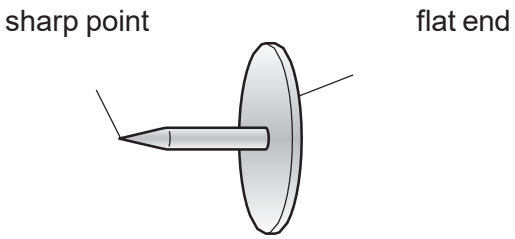
A. using a less dense liquid

B. using a more dense liquid

C. using a narrower tube

D. using a wider tube

A drawing pin (thumb tack) has a sharp point and a flat end.



The pin is pushed into a wooden board.

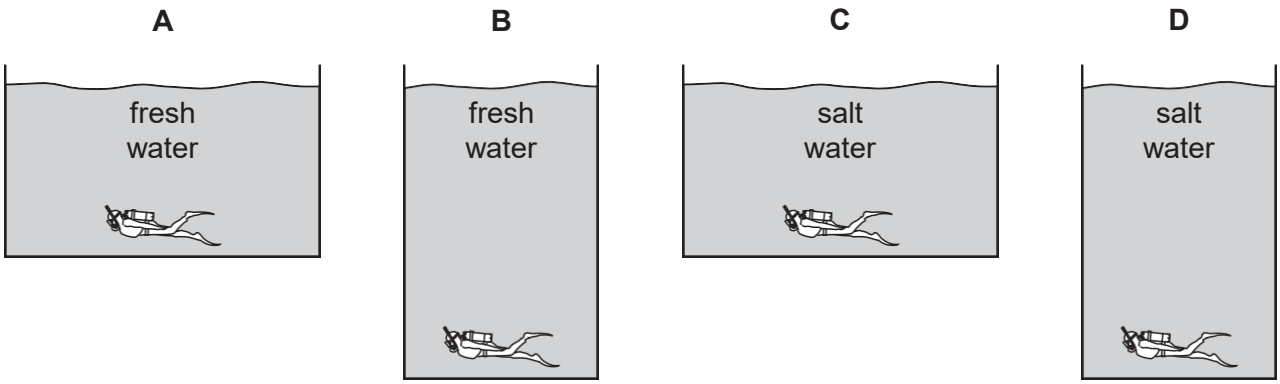
How do the pressure and the force at the sharp point compare with the pressure and the force at the flat end?

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

The diagrams show four divers at the bottom of four different swimming pools.

Two swimming pools contain fresh water and two contain salt water. Fresh water is less dense than salt water.

Which diver feels the least pressure from the water?



It is dangerous for submarines to dive to very great depths.

Why is it dangerous?

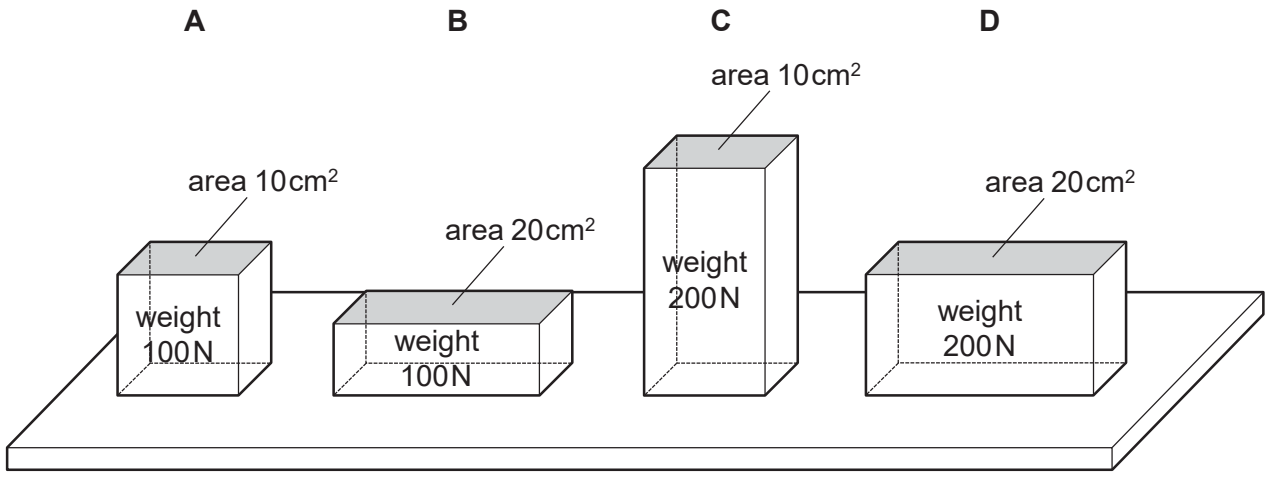
A. The density of water is less at greater depths.

B. The pressure of water is greater at greater depths.

C. The temperature of water is higher at greater depths.

D. The weight of the submarine is greater at greater depths.

Which block exerts the greatest pressure on the surface below it?



Which statement is explained by reference to pressure?

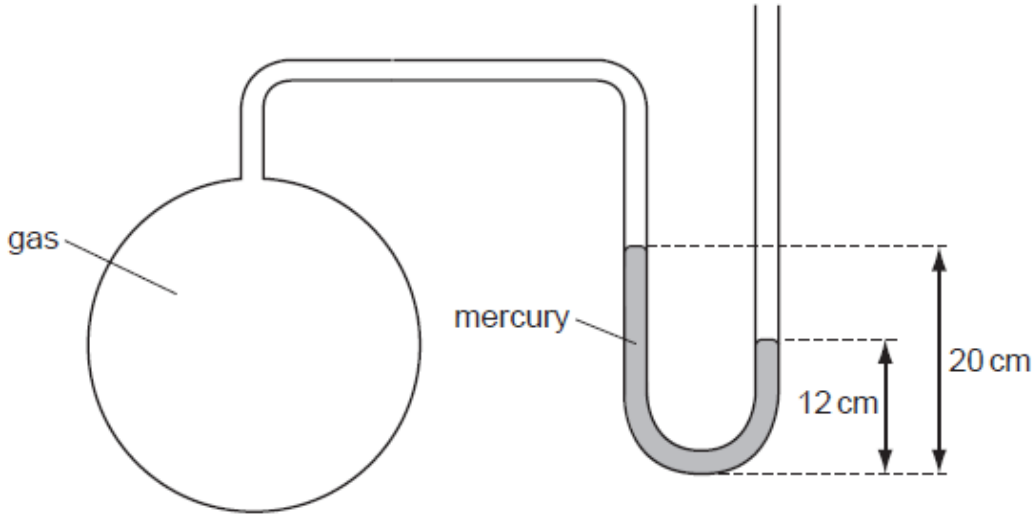
A. Objects with greater mass have greater weight.

B. One kilogram of water occupies more volume than one kilogram of lead.

C. Spikes on running-shoes sink into the ground.

D. Water cooled to a low enough temperature turns to ice.

The diagram shows a mercury manometer used to measure the pressure of gas in a container. Atmospheric pressure is 76 cm of mercury.



A. 56 cm of mercury

B. 68 cm of mercury

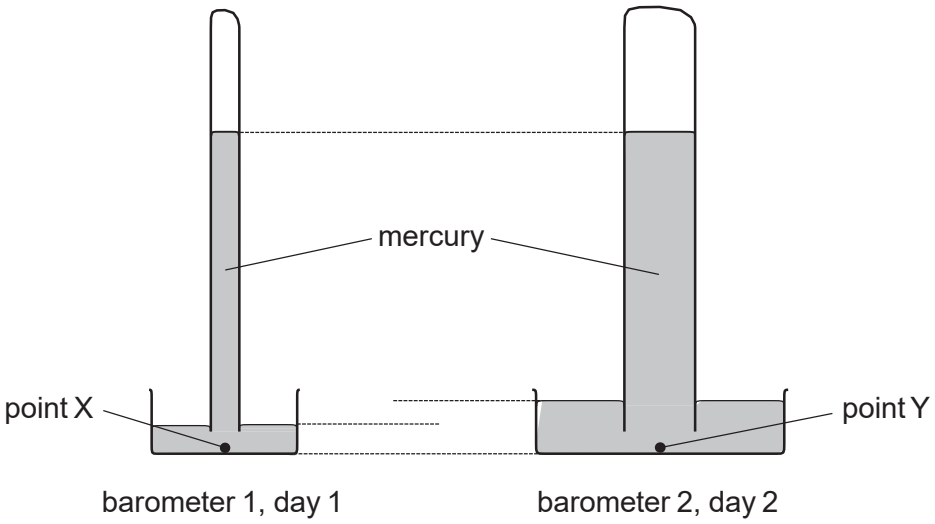
C. 84 cm of mercury

D. 96 cm of mercury

The diagram shows two mercury barometers.

Barometer 1 is measuring atmospheric pressure on day 1.

Barometer 2 is measuring atmospheric pressure on day 2.



Which statement is true?

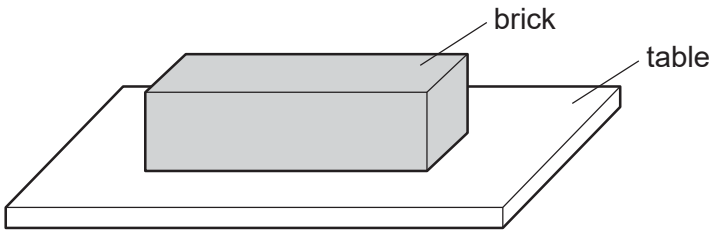
A. The atmospheric pressure on day 1 is less than the atmospheric pressure on day 2.

B. The atmospheric pressure on day 1 is the same as the atmospheric pressure on day 2.

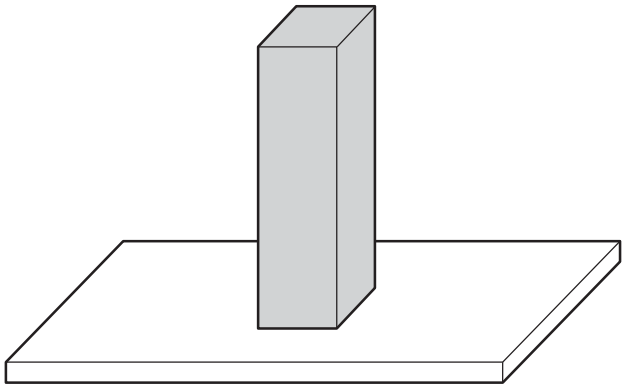
C. The pressure at point X is less than the pressure at point Y.

D. The pressure at point X is the same as the pressure at point Y.

A brick with flat, rectangular sides rests on a table.



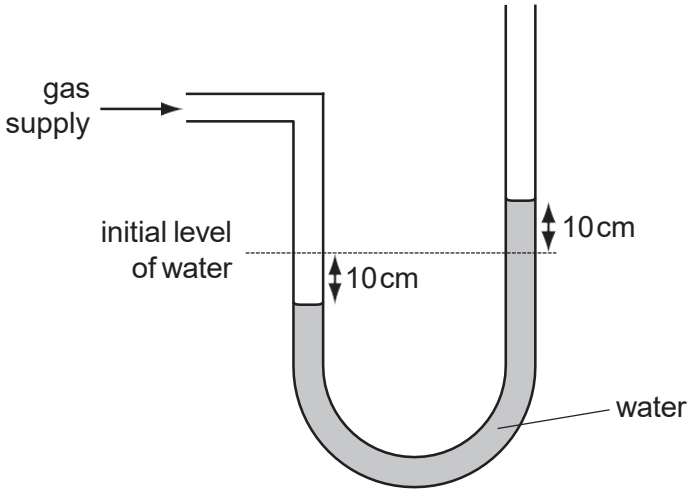
The brick is now turned so that it rests on the table on its smallest face.



How has this affected the force and the pressure exerted by the brick on the table?

	force	pressure
A	increased	increased
B	increased	unchanged
C	unchanged	increased
D	unchanged	unchanged

A water manometer is used to measure the pressure of a gas supply.



When it is attached to the gas supply, the water falls on the left side and rises on the right side. The difference in the levels of water on the two sides is now 20 cm.

What is the pressure of the gas supply?

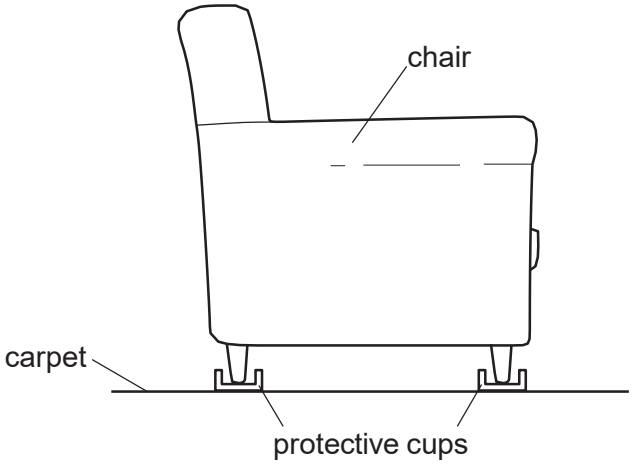
A. the pressure due to 10 cm depth of water

B. the pressure due to 20 cm depth of water

C. the pressure due to 10 cm depth of water plus atmospheric pressure

D. the pressure due to 20 cm depth of water plus atmospheric pressure

A chair is placed on protective cups to prevent damage to the carpet underneath it.



How do the cups change the area of contact with the carpet and the pressure on it?

	area of contact	pressure
A	decreased	decreased
B	decreased	increased
C	increased	decreased
D	increased	increased