

Pressure

Question Paper 1

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	Pressure
Booklet	Question Paper 1

Time allowed: 21 minutes

Score: /17

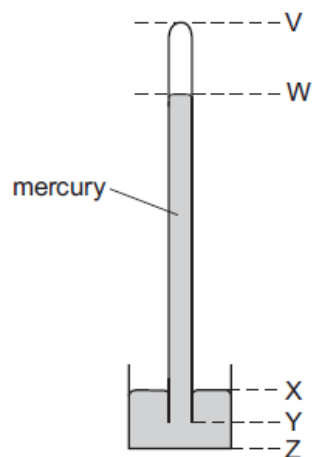
Percentage: /100

Grade Boundaries:

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

Question 1

The diagram shows a simple mercury barometer.



The atmospheric pressure increases.

Which distance increases?

A VW

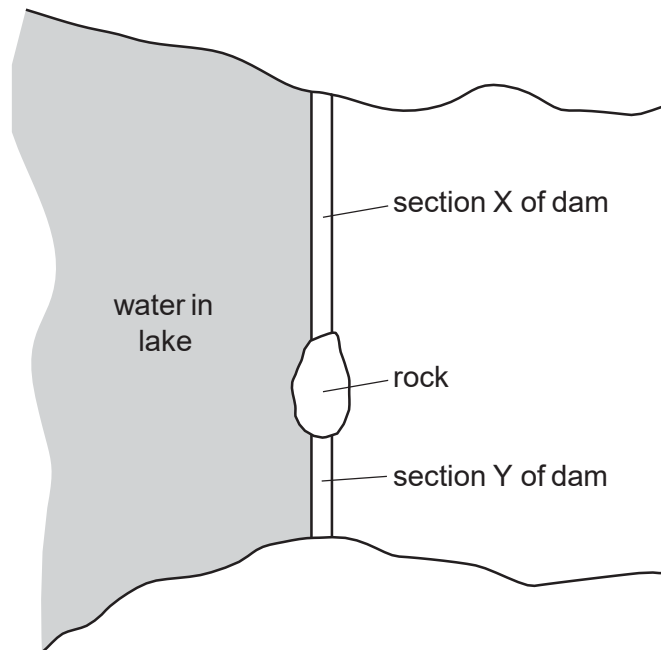
B WY

C XY

D XZ

Question 2

A dam across a lake is divided into two sections by a rock. Section X is longer than section Y but the two sections are otherwise identical. The water in the lake by the dam is the same depth everywhere. The diagram shows a view from above of the lake and the dam.



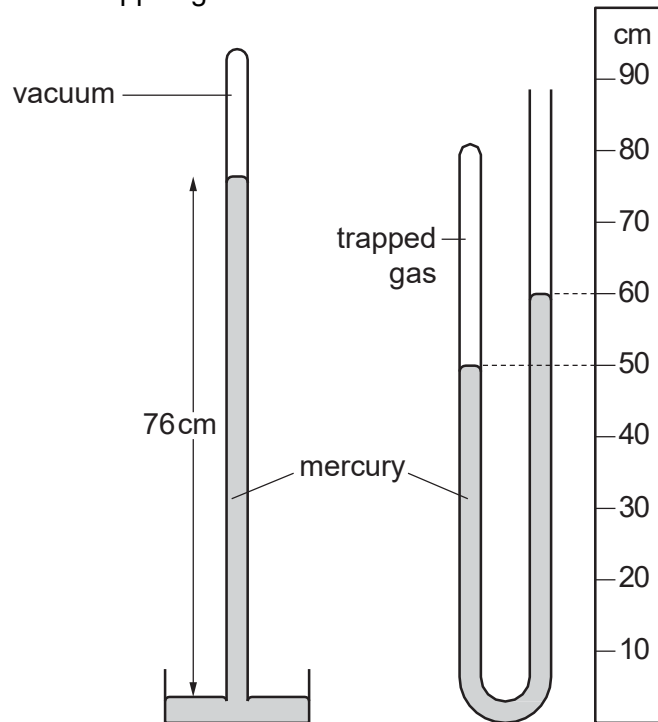
The water creates a total force on each section of the dam and an average pressure on each section of the dam.

Which statement is correct?

- A. The average pressure on X equals the average pressure on Y.
- B. The average pressure on X is less than the average pressure on Y.
- C. The total force on X equals the total force on Y.
- D. The total force on X is less than the total force on Y.

Question 3

The diagram shows a simple mercury barometer alongside a mercury manometer. The manometer contains some trapped gas.



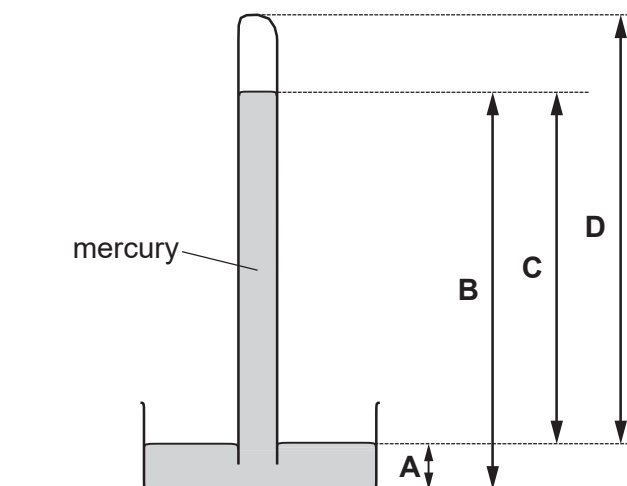
What is the pressure of the trapped gas?

- A 10 cm of mercury
- B 50 cm of mercury
- C 66 cm of mercury
- D 86 cm of mercury

Question 4

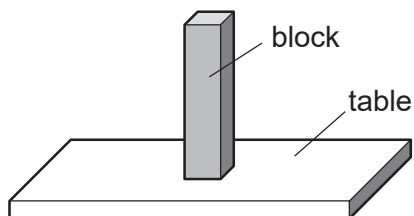
The diagram shows a simple mercury barometer.

Which height is used as a measurement of atmospheric pressure?

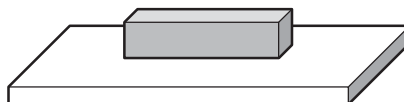


Question 5

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



The block is now turned so that it rests with its largest side on the table.

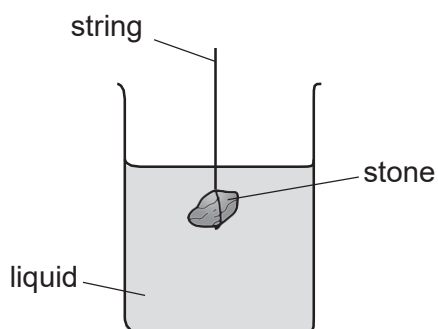


How has this change affected the force and the pressure exerted by the block on the table?

	force	pressure
A	decreased	decreased
B	decreased	unchanged
C	unchanged	decreased
D	unchanged	unchanged

Question 6

The diagram shows a stone suspended under the surface of a liquid from a string. The stone experiences a pressure caused by the liquid.

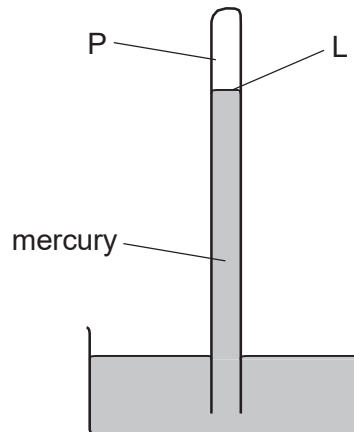


What would increase the pressure on the stone?

- A. decreasing the surface area of the stone
- B. increasing the mass of the stone
- C. lowering the stone deeper into the liquid
- D. using a liquid with a lower density

Question 7

The diagram shows a simple mercury barometer, used to measure atmospheric pressure.



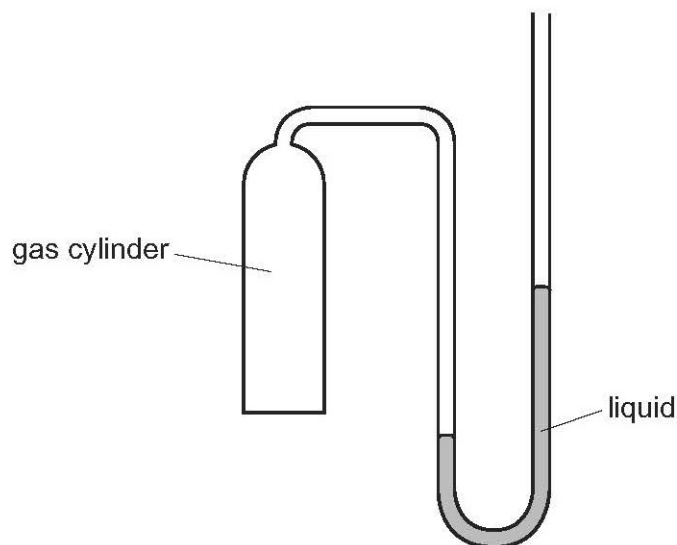
Atmospheric pressure decreases.

Which row states what happens to the pressure at point P and what happens to the level L?

	pressure at P	level L
A	decreases	falls
B	decreases	rises
C	stays the same	falls
D	stays the same	rises

Question 8

The diagram shows a manometer with one side connected to a gas cylinder and the other side open to the atmosphere.

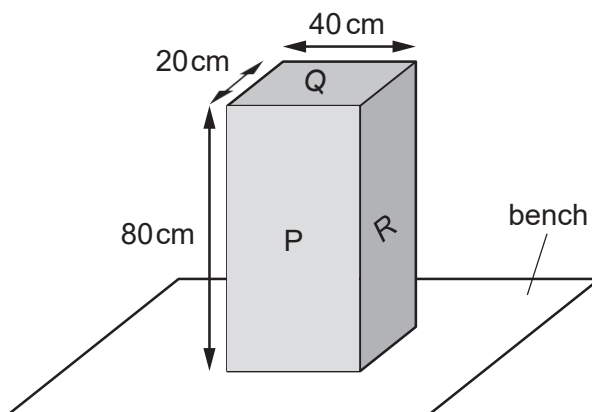


Which conclusion can be made using only the information from liquid levels in the manometer?

- A. The density of the gas is less than the density of air.
- B. The density of the gas is greater than the density of air.
- C. The pressure of the gas is less than atmospheric pressure.
- D. The pressure of the gas is greater than atmospheric pressure.

Question 9

The diagram shows a solid block resting on a bench. The dimensions of the block are shown.



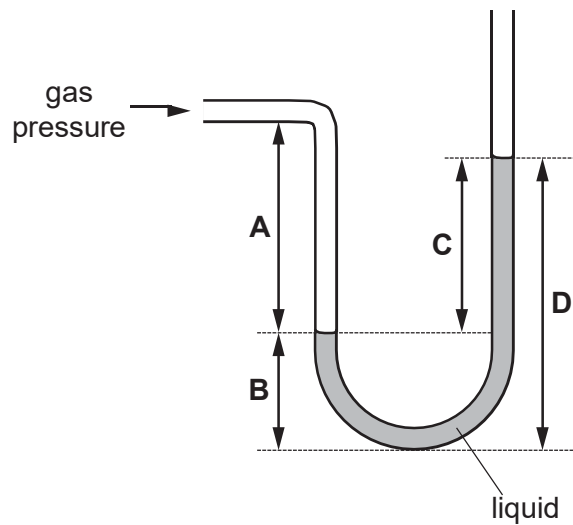
On which labelled surface should the block rest to produce the smallest pressure on the bench?

- A. P
- B. Q
- C. R
- D. any of P, Q or R

Question 10

The diagram shows a manometer containing a liquid. The manometer is used to find the difference between the pressure of a gas and atmospheric pressure.

Which distance represents this pressure difference?



Question 11

Four physics teachers investigate pressure. They wear identical clothes and lie on different beds of nails.

The table gives the weight of each teacher and the total area of contact between the teacher and the nails.

Which teacher experiences the least pressure from the nails?

	weight of teacher/N	total area of contact/cm ²
A	700	13
B	800	20
C	900	14
D	1000	21

Question 12

The table gives four forces and the surface area on which each force acts.

Which row gives the largest pressure on the surface?

	force/N	area/m ²
A	20	2
B	40	2
C	20	4
D	40	4

Question 13

What does a barometer measure?

- A the current in a circuit
- B the density of a liquid
- C the pressure of air
- D the temperature of an object

Question 14

A man is in contact with the floor.

In which of these situations does he produce the least pressure on the floor?

- A. kneeling
- B. lying flat on his back
- C. standing on both feet
- D. standing on one foot

Question 15

The water in a lake is at 5 °C. A diver measures the pressure of the water at two different depths in the lake. He repeats the measurements on a different day when the water is at 15°C.

The density of the water decreases when its temperature increases.

Which combination of depth and temperature produces the greatest water pressure?

	depth /m	temperature /°C
A	10	5
B	10	15
C	20	5
D	20	15

Question 16

A vehicle sinks into soft ground.

The vehicle is changed so that it does not sink as far.

Which change is made?

- A. a lower centre of mass
- B. a more powerful engine
- C. wheels that are further apart
- D. wider tyres

Question 17

A manometer is used to measure the pressure of a gas trapped in a cylinder.

At which labelled point on the diagram is the pressure greatest?

