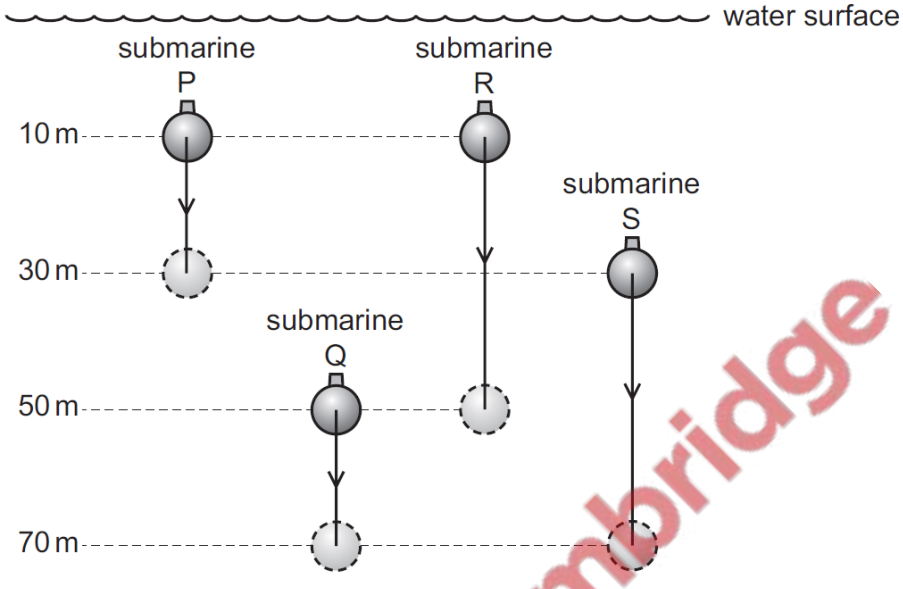
Pressure – 2019 June

1. 0625/11/M/J/19/No.12

Four identical submarines P, Q, R and S are lowered from one depth to another in water of a constant density.

The initial and final depths of each submarine are shown in the diagram.

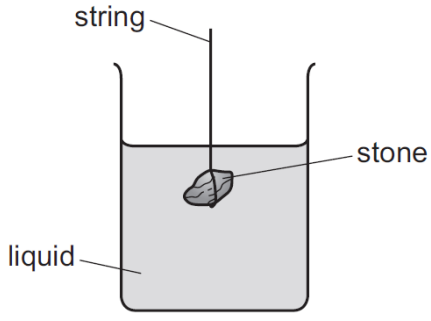


Which row is correct for the difference in pressure from the initial to final depth of each submarine?

	least change in pressure	greatest change in pressure
A	submarines P and Q	submarines R and S
B	submarines P and Q	submarine R only
C	submarine P only	submarines R and S
D	submarine P only	submarine R only

2. 0625/11$12$13,22,23/M/J/19/No.13

The diagram shows a stone suspended on a string under the surface of a liquid. 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

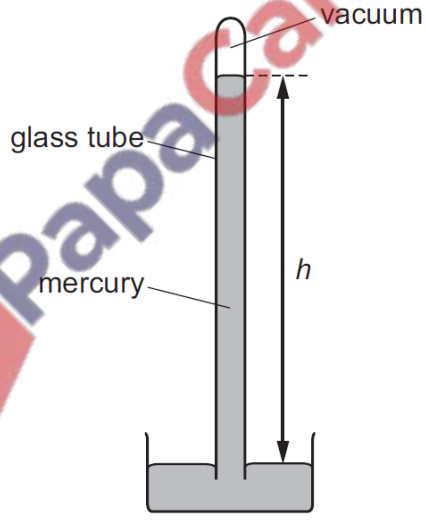
B increasing the mass of the stone

C lowering the stone deeper into the liquid

D using a liquid with a lower density

3. 0625/13/M/J/19/No.12

The diagram shows a simple mercury barometer.



A change is made and the vertical height *h* of the column increases.

Which change causes this increase?

A A liquid with a lower density than mercury has been used.

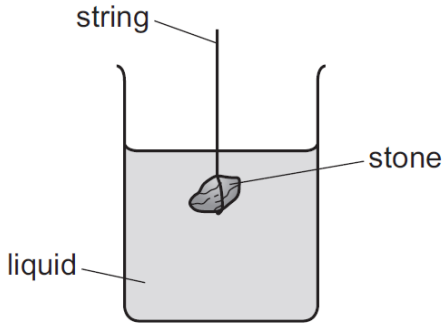
B Atmospheric pressure decreases.

C A narrower glass tube is used.

D The glass tube is tilted.

4. 0625/21/M/J/19/No.13

The diagram shows a stone suspended on a string under the surface of a liquid. 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

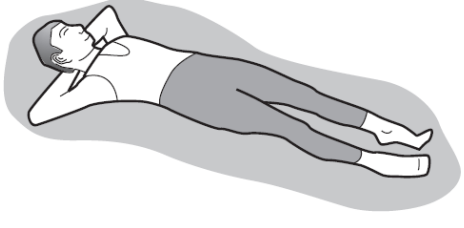
D using a liquid with a lower density

5. 0625/12, 22/F/M/19/No.12, 14

Which diagram shows an athlete exerting least pressure on the ground?

A

B

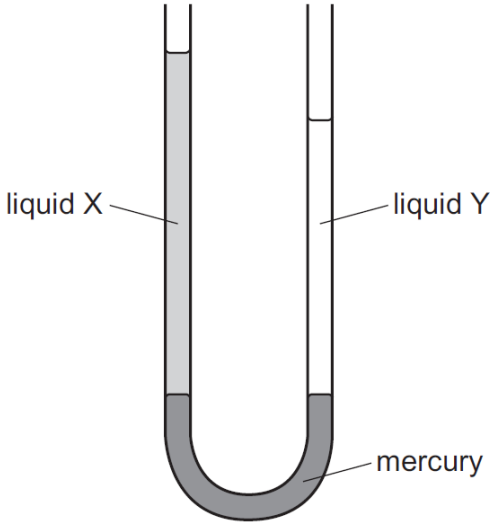


C

D

6. 0625/12, 22/F/M/19/No.12, 15

The diagram shows a U-tube manometer containing three liquids: mercury, liquid X and liquid Y. Neither liquid X or liquid Y mixes with mercury.



Which row compares the pressure exerted by liquid X and by liquid Y on the mercury, and the density of liquid X and the density of liquid Y?

	pressure exerted by X and by Y on the mercury	densities of X and of Y
A	pressure of X is greater than Y	density of X is greater than Y
B	pressure of Y is greater than X	density of Y is greater than X
C	pressure of X and of Y is the same	density of X is greater than Y
D	pressure of X and of Y is the same	density of Y is greater than X

7. 0625/22/F/M/19/No.16

Gas molecules exert a pressure when they collide with the walls of a container.

Which statement is correct?

A They experience a change in force which exerts a pressure equal to momentum × area on the walls.

B They experience a change in force which exerts a pressure equal to $\frac{\text{momentum}}{\text{area}}$ on the walls.

C They experience a change in momentum which exerts a pressure equal to force × area on the walls.

D They experience a change in momentum which exerts a pressure equal to $\frac{\text{force}}{\text{area}}$ on the walls.

8. 0625/12/F/M/19/No.14

A car tyre runs over a nail which makes a hole in it. The air in the tyre leaks out.

Why does the air leave the tyre?

A The pressure inside the tyre is greater than the pressure outside.

B The pressure inside the tyre is less than the pressure outside.

C The temperature inside the tyre is greater than the temperature outside.

D The temperature inside the tyre is less than the temperature outside.