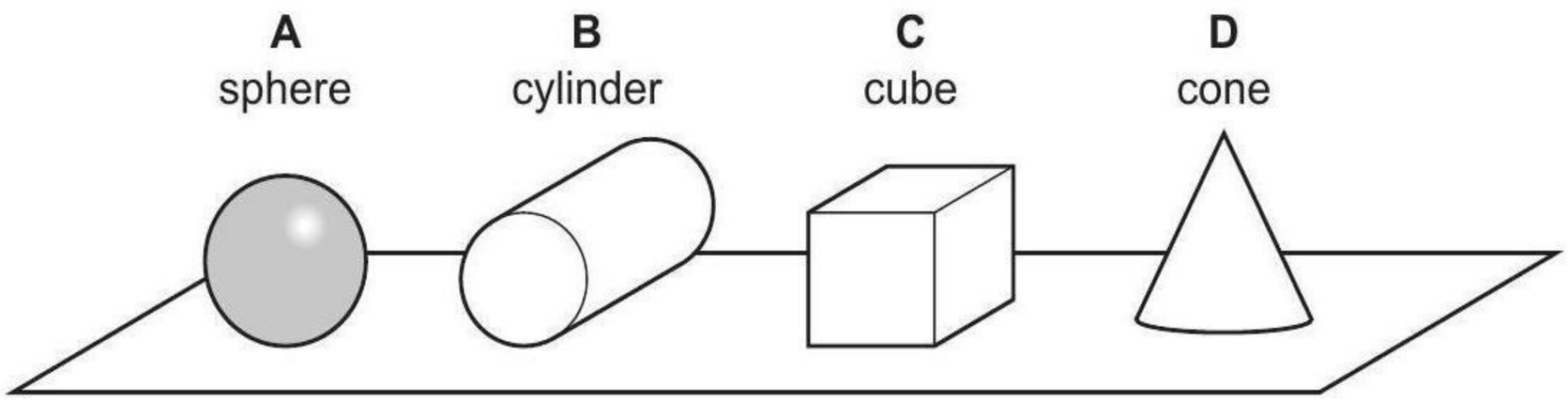
1)

12 The diagram shows four solid objects resting on a horizontal surface. The objects all have the **same** weight, and are drawn to the same scale.

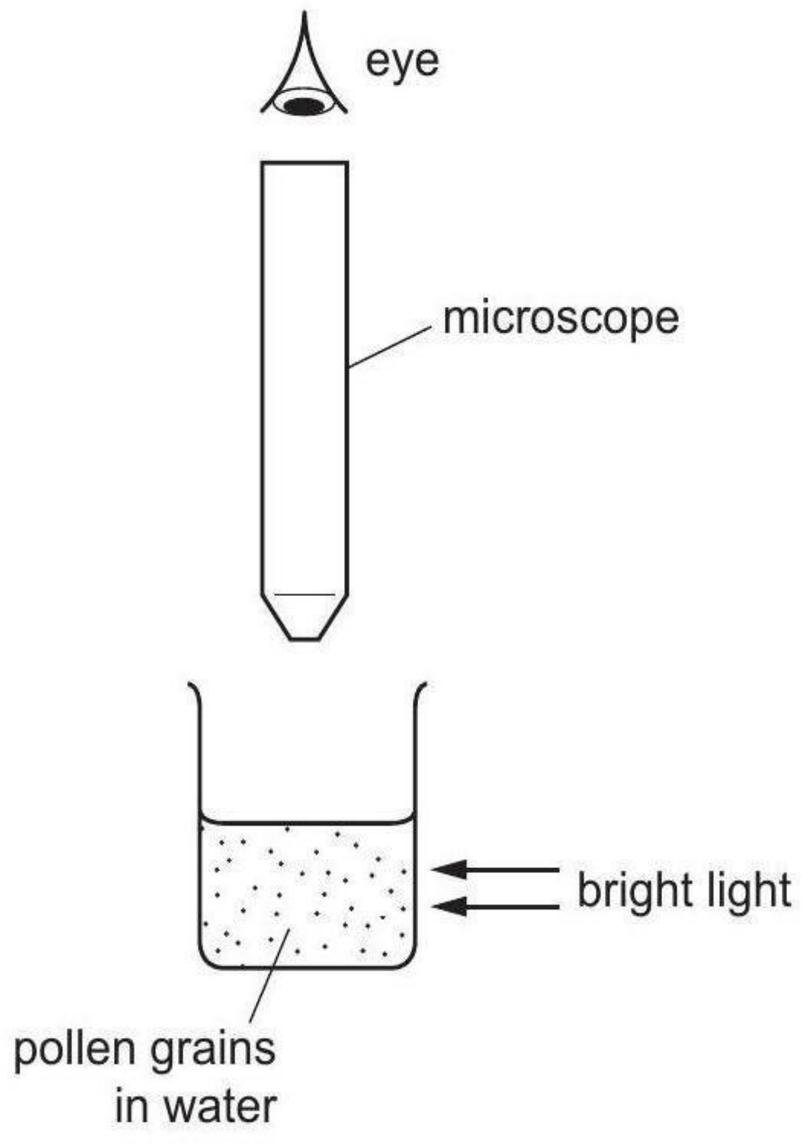
Which object exerts the least pressure on the surface?



2)

14 Very small pollen grains are suspended in water. A bright light shines from the side.

When looked at through a microscope, small specks of light are seen to be moving in a random, jerky manner.



What are the moving specks of light?

A pollen grains being hit by other pollen grains

B pollen grains being hit by water molecules

C water molecules being hit by other water molecules

D water molecules being hit by pollen grains

3)

15 When a thermometer is calibrated, the fixed points are marked.

What are fixed points?

A all the marks on the temperature scale which cannot be removed

B all the marks of the temperature scale

C the lowest and highest temperatures shown on the thermometer

D two temperatures of known value which are easily reproduced

4)

13 On a hot day, the pressure of the air in a car tyre is greater than on a cold day.

Why is the pressure greater on a hot day?

A The air molecules strike each other more frequently.

B The air molecules strike each other with greater force.

C The air molecules strike the tyre walls more frequently.

D The number of air molecules in the tyre increases.

5)

16 Which statement defines the thermal capacity (heat capacity) of a solid body?

A the energy needed to melt the body without a change in temperature

B the energy needed to raise the temperature of the body by one degree Celsius

C the increase in the volume of the body when its temperature is raised by one degree Celsius

D the total amount of internal energy in the body

6)

17 A substance can exist in three different states: solid, liquid or gas.

Each of the two statements below describes a change of state.

change 1 Molecules move closer together but continue to travel throughout the substance.

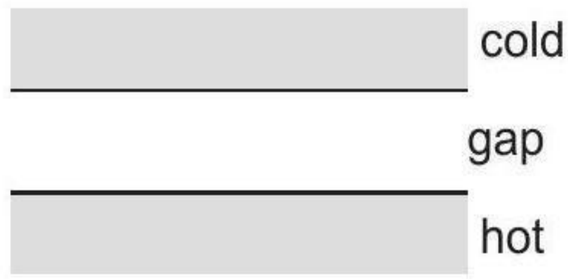
change 2 Molecules stop travelling throughout the substance and just vibrate about fixed positions.

Which changes of state do these statements describe?

	change 1	change 2
A	condensation	melting
B	condensation	solidification
C	solidification	condensation
D	solidification	melting

7)

18 The diagram shows the gap between a hot surface and a cold surface. The gap can contain air, solid iron, a vacuum or liquid water.

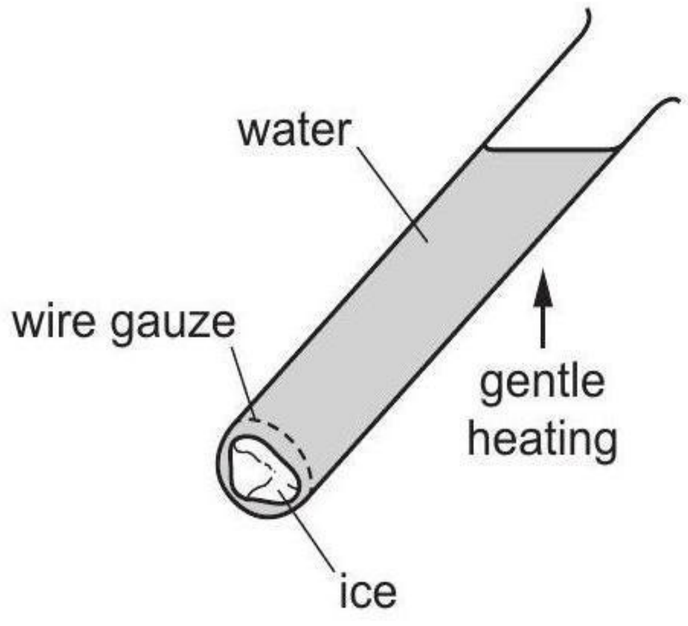


Which row shows whether heat can be transferred between the surfaces by conduction and convection?

		conduction	convection
A	air (gas)	yes	no
B	iron (solid)	yes	no
C	vacuum	no	yes
D	water (liquid)	yes	no

8)

19 Ice is trapped by a piece of wire gauze at the bottom of a tube containing water. The water at the top of the tube boils before the ice at the bottom of the tube melts.



Why does this happen?

A Convection currents are circulating throughout the water.

B Ice is a poor emitter of thermal energy.

C Water is a poor conductor of thermal energy.

D Wire gauze is a good conductor of thermal energy.