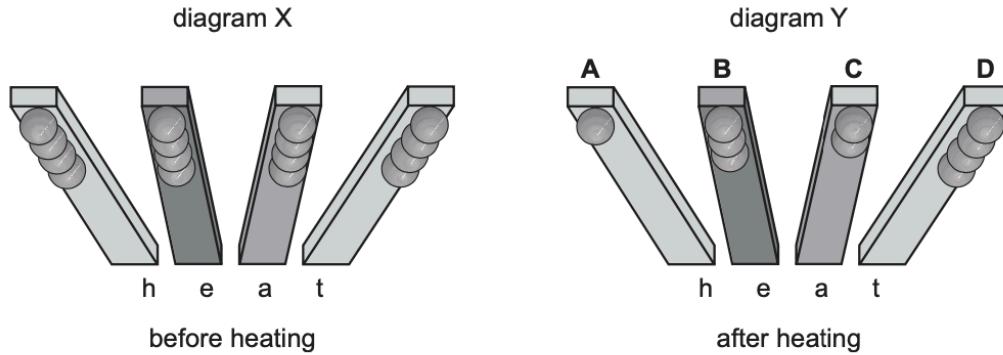


An experiment is set up to find out which metal is the best conductor of heat. Balls are stuck with wax to rods made from different metals, as shown in diagram X.

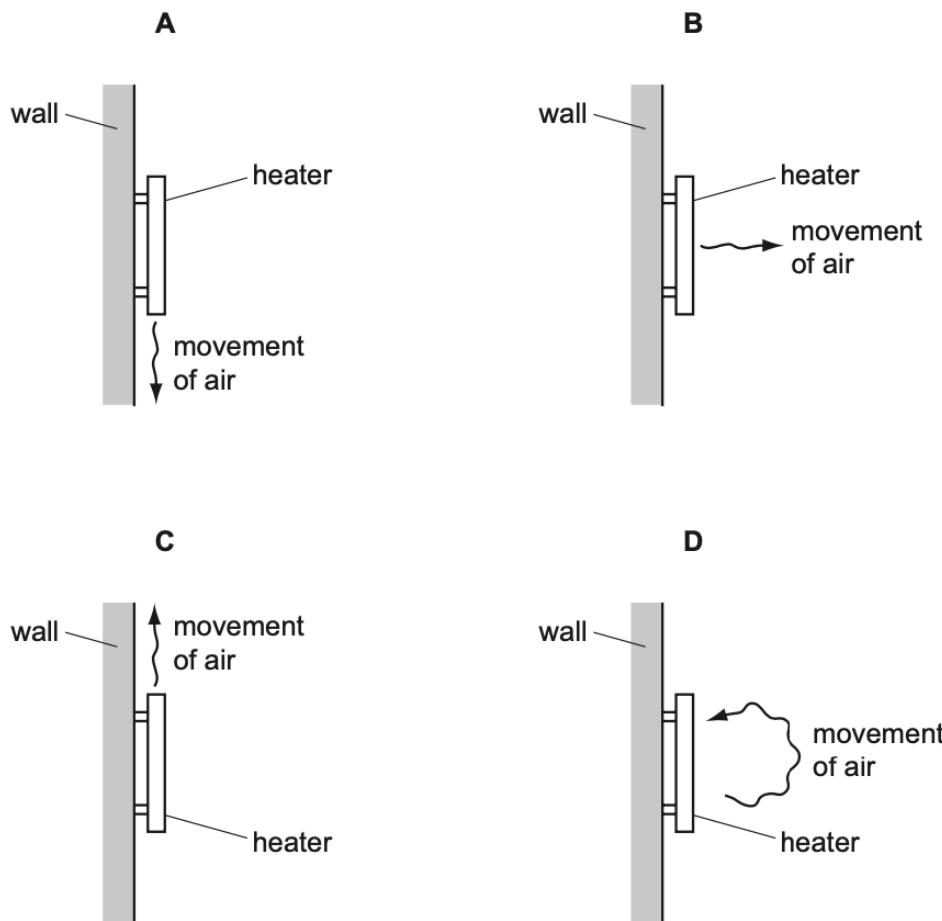
The rods are heated at one end. Some of the balls fall off, leaving some as shown in diagram Y.

Which labelled metal is the best conductor of heat?

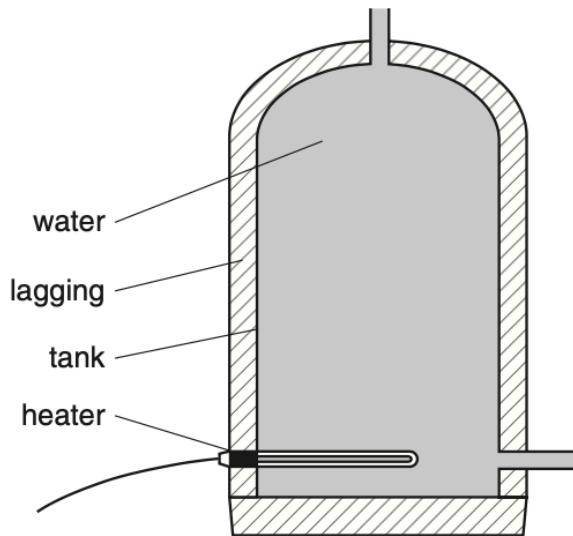


A convector heater is fixed to a wall.

Which diagram shows how warm air near the heater moves because of convection in the air?



The diagram shows a heater used to heat a tank of cold water.



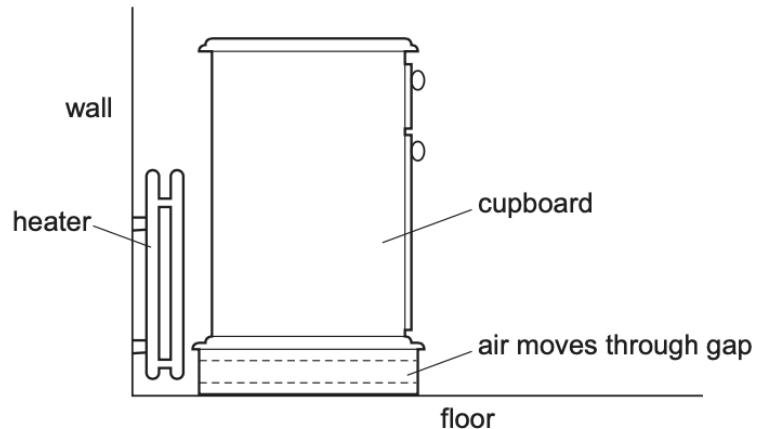
What is the main process by which heat moves through the water?

- A** conduction
- B** convection
- C** evaporation
- D** radiation

Which statement refers to convection?

- A** It does not involve energy transfer.
- B** It is the transfer of heat energy without the movement of particles.
- C** It only occurs in liquids or gases.
- D** It only occurs in solids.

A cupboard is placed in front of a heater. Air can move through a gap under the cupboard.



Which line in the table describes the temperature and the direction of the air that moves through the gap?

	air temperature	air direction
A	cool	away from the heater
B	cool	towards the heater
C	warm	away from the heater
D	warm	towards the heater

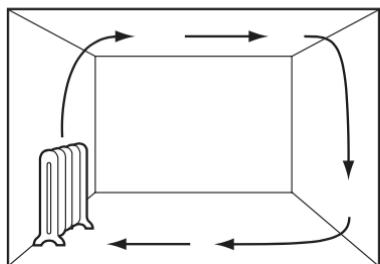
Which line in the table is correct about conduction and convection?

	conduction	convection
A	can happen in a solid	can happen in a solid
B	can happen in a solid	only happens in fluids
C	only happens in fluids	can happen in a solid
D	only happens in fluids	only happens in fluids

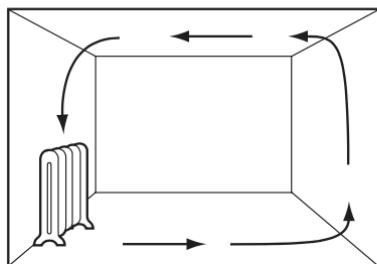
A heater is placed in a room.

Which diagram shows the movement of air as the room is heated?

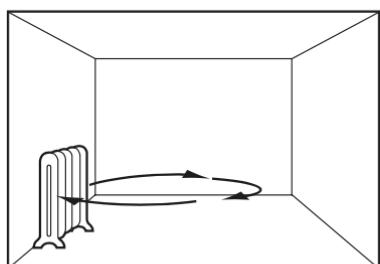
A



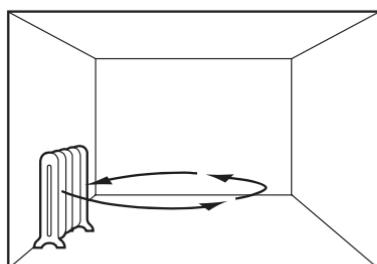
B



C

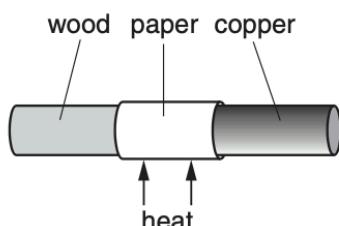


D



A bar made of half wood and half copper has a piece of paper wrapped tightly round it.

The bar is heated strongly at the centre for a short time, and the paper goes brown on one side only.



Which side goes brown, and what does this show about wood and copper?

	brown side	wood	copper
A	copper	conductor	insulator
B	copper	insulator	conductor
C	wood	conductor	insulator
D	wood	insulator	conductor

(a) Fig. 5.1 shows a copper rod AB being heated at one end.

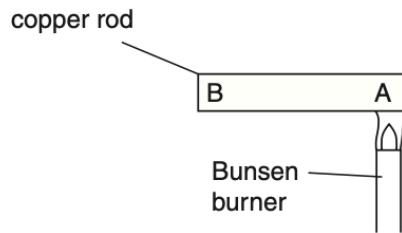


Fig. 5.1

(i) Name the process by which heat moves from A to B.

.....

(ii) By reference to the behaviour of the particles of copper along AB, state how this process happens.

.....

.....

[3]

(b) Give an account of an experiment that is designed to show which of four surfaces will absorb most heat radiation.

The four surfaces are all the same metal, but one is a polished black surface, one is a polished silver surface, one is a dull black surface and the fourth one is painted white. Give your answer under the headings below.

labelled diagram of the apparatus

readings to be taken

one precaution to try to achieve a fair comparison between the various surfaces

.....

.....

[3]

