TARGET To make nets for 3-D shapes.
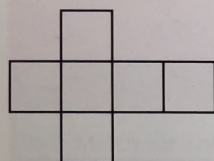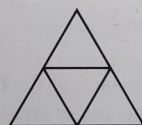
A net is a 2-D representation of a 3-D shape. It shows the faces of the 3-D shape arranged so that they can be folded to build the shape.

The simplest nets to build are those of 3-D shapes with regular faces.

A net for a cube is easily constructed using square paper.

Similarly, triangular paper can be used to make a net for a tetrahedron.

When constructing nets for 3-D shapes which do not have regular faces you need to be very careful that your shape will fit together precisely.

A good way to understand how to draw nets is to unfold actual boxes, such as cereal boxes or Toblerone packets, and study which lengths of the net match each other.
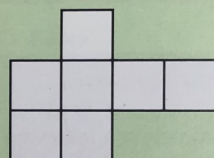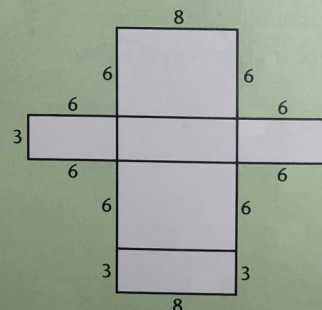
A

All lengths are in cm.

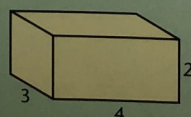1 Copy this net onto squared paper. Cut it out and fold it to make an open cube.
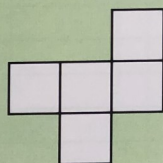
2 Copy this net. Cut it out. Cut off one square and fold it to make a net for a closed cube.

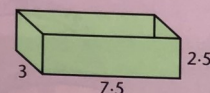3 Copy this net onto square paper. Cut it out and make the cuboid.

4 Make a net for a closed cube with edges 2 cm long.

5 Make a net for this cuboid.

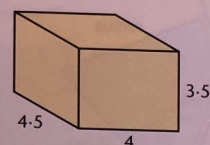## B

All lengths are in cm.

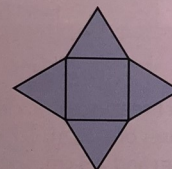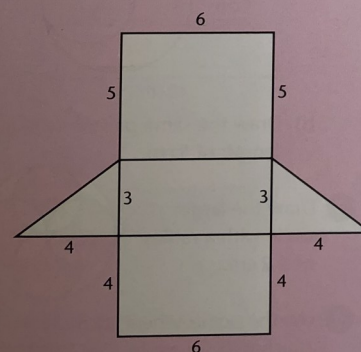1 Make a net for this open cuboid.

2 Make a net for this closed cuboid.

3 Copy this net onto squared paper. Cut it out and make the pyramid.

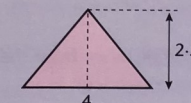4 Copy this net onto squared paper. Cut it out and make the triangular based prism.

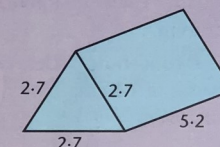5 There are 11 different nets for a closed cube. Can you find them all?

C

All lengths are in cm.

1 Make a net for a square based pyramid with a base area of 16 cm² and a height of 2·5 cm for each triangular face.

2 Make a net for this triangular based prism. Cut it out and build the shape.

3 A prism is 4·9 cm long. Its end face is a regular hexagon with 1·6 cm sides. Make a net for the prism. Cut it out and build the shape.

4 Make a net for a tetrahedron with edges of 3·4 cm.

5 Make a net for this hexagonal based prism. Cut it out and make the prism.
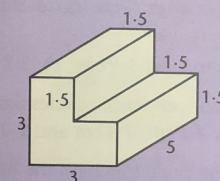
6 Copy this hexagon. Cut it out. Cut off two triangles to make a net for a tetrahedron.
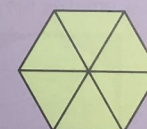
7 Work systematically to find all the possible nets for a tetrahedron.