19 Recognition of Solids

Q1. Match the following objects with their 3-D shapes:

Joker's cap	Cuboid
Rolling pin	Cone
Shoe box	Sphere
Basketball	Cylinder

Q2. A solid figure has one round and two flat faces and no vertices. So, it can roll on one of its surface and slide on two surfaces. Identify the shape and find the number of edges it has.

Number of edges = _____

Solid figure: _____

Q3. Match the following definitions with their terms:

Term	Definition
Two adjacent faces of a solid intersect to form a line	Edge
Point where three or more edges intersect	Vertex
Plane surface enclosed by one or more edges	Face
Arrangement of plane figures that can be folded to make a 3-D solid	Net

Q4. Fill in the missing number of edges, faces and vertices for each 3-D shape in the table below and verify Euler's formula in each case:

Shape	Vertices	Faces	Edges	Verifying Euler's formula
Cube	____	6	12	____ + ____ – ____ = ____
Pyramid	4	____	6	____ + ____ – ____ = ____
Prism	6	5	____	____ + ____ – ____ = ____

Q5. A piece of wood is cut into the following shapes. Identify the shapes and draw their net:
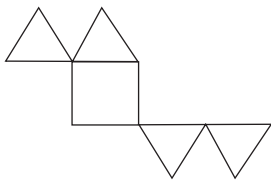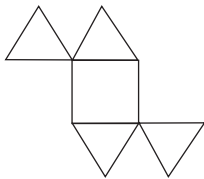
a.
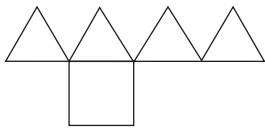

Shape: _____

Net:

b.

Shape: _____

Net:

Q6. Which of the following cannot be folded to make a square pyramid? Choose the correct answer.
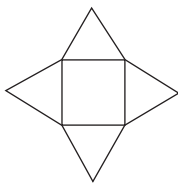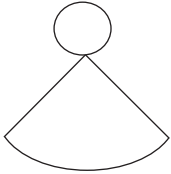

a.

b.

c.

d.

Answer: _____

Q7. Sarita wanted to make 10 cones from a sheet of paper. She drew ten outlines as shown below but felt something's wrong.

Can you find the error and correct the shape?

Correct shape should be : _____

Q8. Rajat has to make 25 square pyramids for a school project. He has to colour the base of the pyramids with blue colour and the remaining part green. Find the number of faces he has to paint in each colour and fill in the blanks given below:

a. Rajat has to put green colour on _____ faces.

b. _____ square faces have to be painted blue.

c. In all Rajat has to paint _____ faces.

Q9. Ritika wants to secure all the edges of the cube that she has made using a tape. If she uses 36 cm of tape for one cube, find the length of each edge of the cube.

Answer: _____

Q10. On the map, Shubham's school and house are 8 cm apart. If the scale of the map is (1 cm = 0.25 km), find the actual distance between the two places.

Answer: _____

Answers

1.

Joker's cap	Cone
Rolling pin	Cylinder
Shoe box	Cuboid
Basketball	Sphere

2. 2; cylinder

3.

Term	Definition
Two adjacent faces of a solid intersect to form a line	Vertex
Point where three or more edges intersect	Net
Plane surface enclosed by one or more edges	Edge
Arrangement of plane figures that can be folded to make a 3-D solid	Face

4.

Shape	Vertices	Faces	Edges	Verifying Euler's formula
Cube	8	6	12	$8 + 6 - 12 = 2$
Pyramid	4	4	6	$4 + 4 - 6 = 2$
Prism	6	5	9	$6 + 5 - 9 = 2$
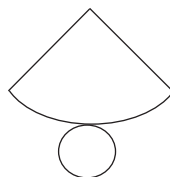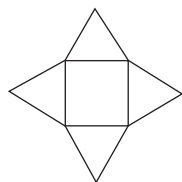
5. a. square pyramid;   b. cone;

6. (a)

7.
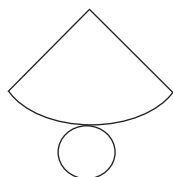
8. a. 100; b. 25; c. 125

9. 3 cm

10. 2 km