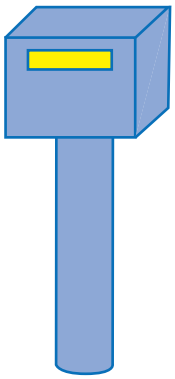
19 RECOGNITION OF SOLIDS

Q1. Which two solid shapes have been used in making the following letter box?



Answer: _____

Q2. Write the 3–D shapes of the following objects:

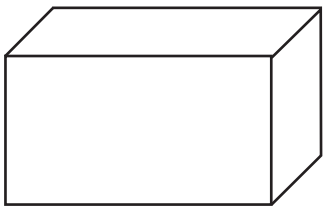
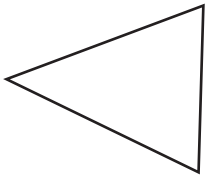
a. Joker's cap : _____

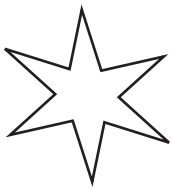
b. Coffee mug : _____

c. A globe : _____

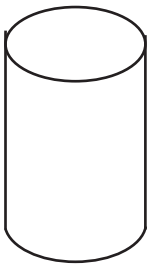
d. A television : _____

Q3. Classify the following shapes as two–dimensional or three–dimensional. In the space provided, write 2–D for two–dimensional and 3–D for three–dimensional.

Shape	2–dimensional or 3–dimensional
a. 	_____
b. 	_____

c. 

_____

d. 

_____

e. 

_____

Q4. Rashmi has cutouts of four triangles and a square. The sides of each of the triangles and the square measures 2.5 cm. Which of the following 3–D shapes can Rashmi make, using all the cutouts?

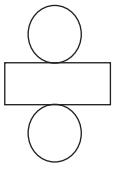
a. Triangular prism

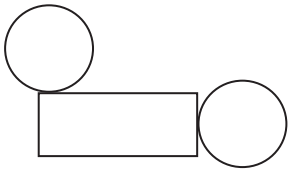
b. Square pyramid

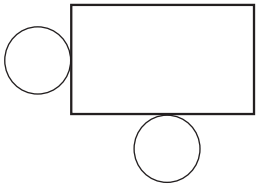
c. Cube

Answer: _____

Q5. Which of the following can be folded to make a cylinder? Choose the correct answer.

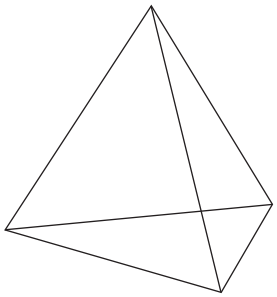
a. 

b. 

c. 

Answer: _____

Q6. Find the number of faces, edges and vertices in the following 3–D figure and verify Euler's formula:



Number of faces: _____;

Number of edges: _____;

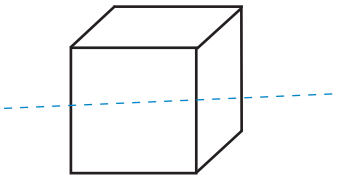
Number of vertices: _____

Verifying Euler's Formula: _____

Q7. 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
Cuboid	____	6	12	____ + ____ – ____ = ____
Square Pyramid	5	____	8	____ + ____ – ____ = ____
Triangular Prism	6	5	____	____ + ____ – ____ = ____

Q8. A cube is cut horizontally from the middle along the dotted line, as shown in the figure below.

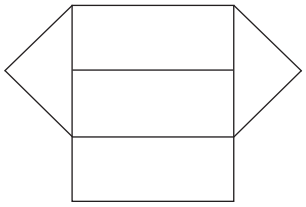


Name the shape of the two identical solids that will be formed after cutting, and draw their net.

Shape of the two solids : _____

Net of the resultant solids : _____

Q9. Sarita wanted to make 10 triangular prisms 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 : _____

Q10. Fill in the blanks:

a. A cylinder has _____ edges.

b. A square pyramid has _____ faces and _____ vertices.

c. A cylinder and a sphere have no _____.

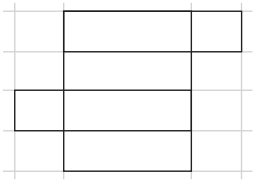
d. A cube has _____ vertices.

Answers

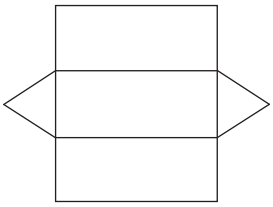
1. A cylinder and a cuboid
2. a. Cone; b. Cylinder; c. Sphere; d. Cuboid
3. a. 3–D, b. 2–D, c. 2–D, d. 3–D, e. 2–D
4. (b)
5. (a)
6. Number of faces: 4;
   Number of edges: 6;
   Number of vertices: 4
   V + F – E = 2, 4 + 4 – 6 =2
7.

Shape	Vertices	Faces	Edges	Verifying Euler's formula
Cuboid	8	6	12	8 + 6 – 12 = 2
Square Pyramid	5	5	8	5 + 5 – 8 = 2
Triangular Prism	6	5	9	6 + 5 – 9 = 2

8. Cuboid;



9.



10. a. 2; b. 5,5; c. vertex; d. 8