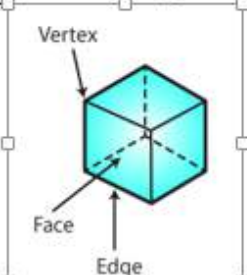
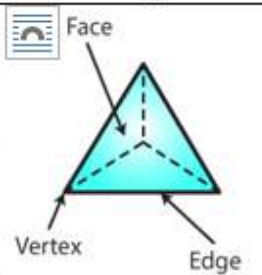

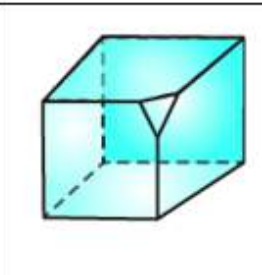
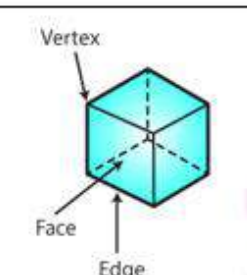
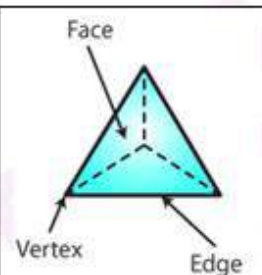
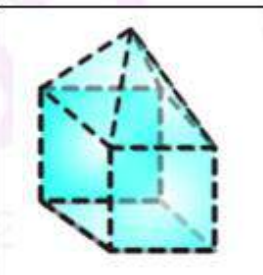
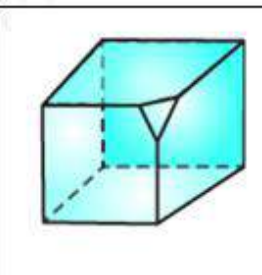


EXERCISE 19.1

1. Complete the following table and verify Euler's formula in each case.

				
<b>Faces (F)</b>	<b>6</b>	<b>4</b>		
<b>Edges (E)</b>	<b>12</b>			
<b>Vertex (V)</b>	<b>8</b>	<b>4</b>		

Solution:

				
<b>Faces (F)</b>	6	4	9	7
<b>Edges (E)</b>	12	6	16	15
<b>Vertex (V)</b>	8	4	9	10

(i) We know that Euler's formula is  $(F - E + V)$

$$(F - E + V) = (6 - 12 + 8) = 2$$

Hence Euler's formula verified

(ii) We know that Euler's formula is  $(F - E + V)$

$$(F - E + V) = (4 - E + 4) = 2.$$

$$E = 6$$

Hence Euler's formula verified

(iii) We know that Euler's formula is  $(F - E + V)$

From the figure,

$$(F - E + V) = (9 - 16 + 9) = 2.$$

Hence Euler's formula verified

(iv) We know that Euler's formula is  $(F - E + V)$

From the figure,

$$(F - E + V) = (7 - 15 + 10) = 2.$$

Hence Euler's formula verified

**2. Give three examples from our daily life which are in the form of**

- (i) A cone**
- (ii) A sphere**
- (iii) A cuboid**
- (iv) A cylinder**
- (v) A pyramid.**

**Solution:**

- (i) Examples for Cone: Ice-cream cone, birthday cap
- (ii) Examples of Sphere: Football, a round apple, an orange
- (iii) Examples of Cuboid: dice, duster, book, rectangular box
- (iv) Examples of Cylinder: circular pipe, glass, circular pole, gas cylinder
- (v) Examples for Pyramid: Christmas tree, prism

EXERCISE 19.2

1. Match the following nets with appropriate solids:

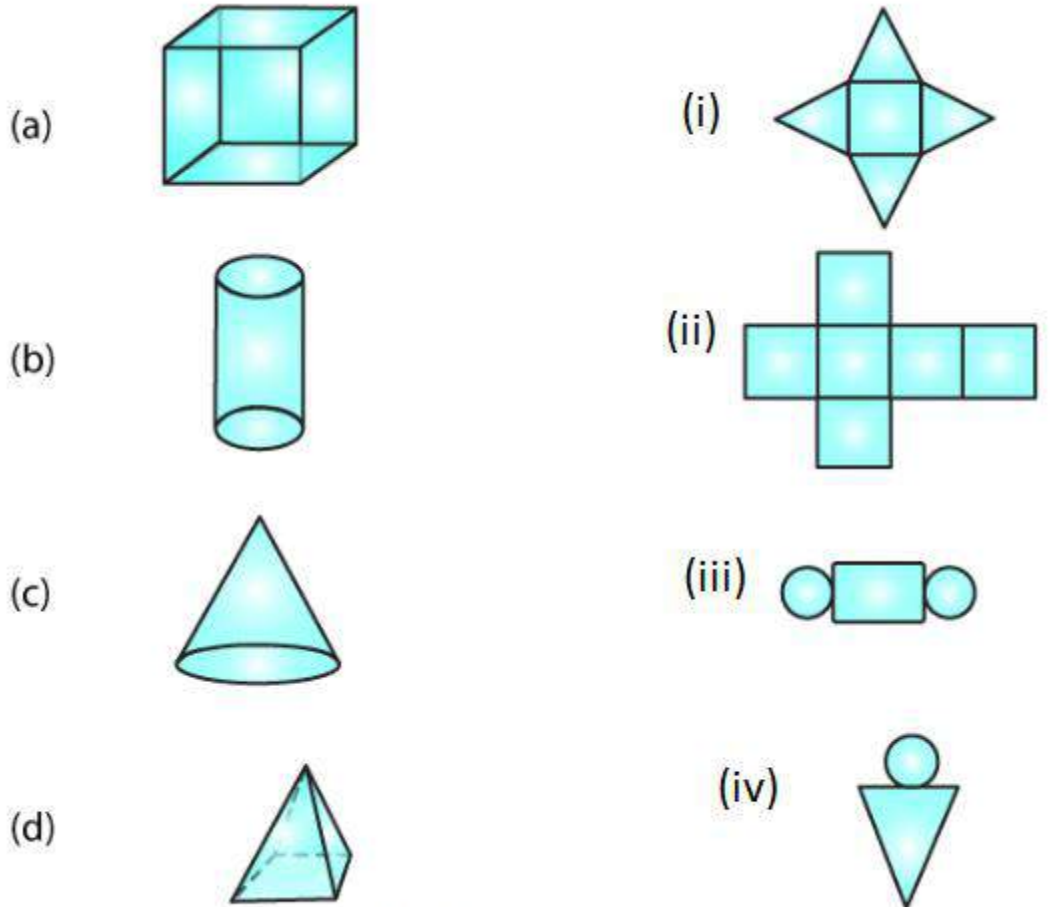


Fig. 20

**Solution:**

- (a) → (ii)
- (b) → (iii)
- (c) → (iv)
- (d) → (i)

2. Identify the nets which can be used to make cubes (cut-out the nets and try it):

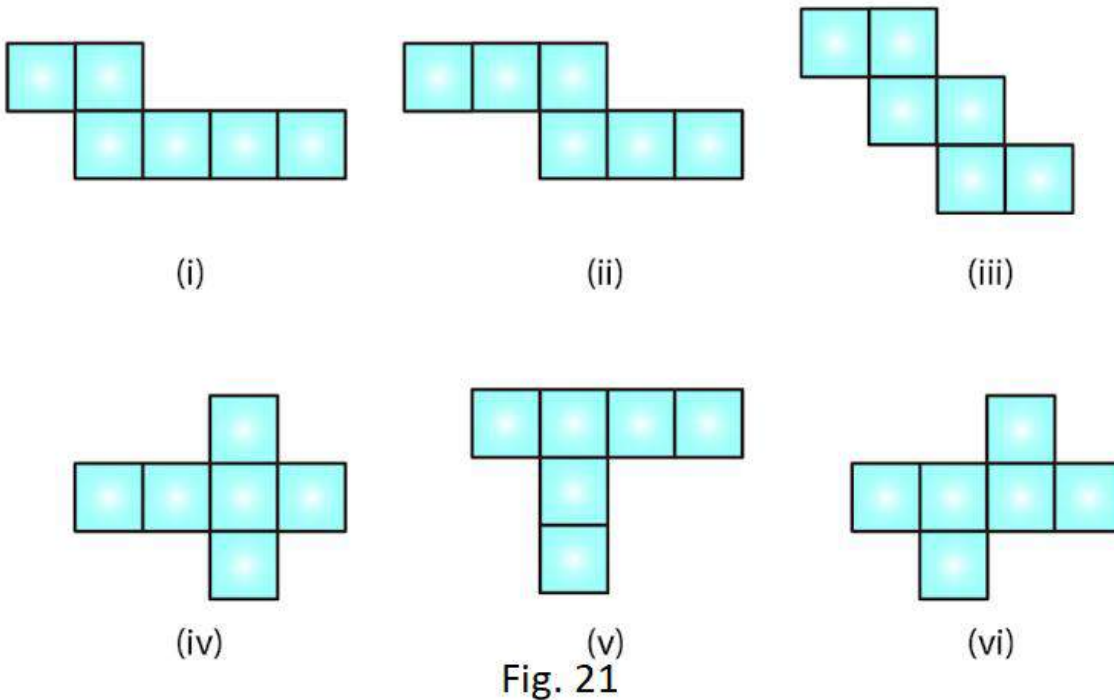


Fig. 21

**Solution:**

Only (ii), (iv) and (vi) form a cube.

**3. Can the following be a net for a die? Explain your answer.**

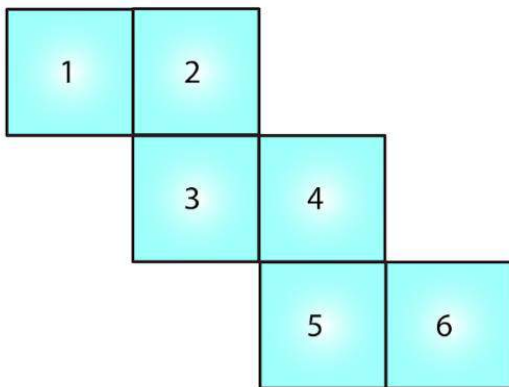


Fig. 22

**Solution:**

We know that in a die, the sum of the number of opposite faces of a die is 7. In the given figure, it is not possible to get the sum as 7. Hence the given net is not suitable for a die.

**4. Out of the following four nets there are two correct nets to make a tetrahedron. Identify them.**

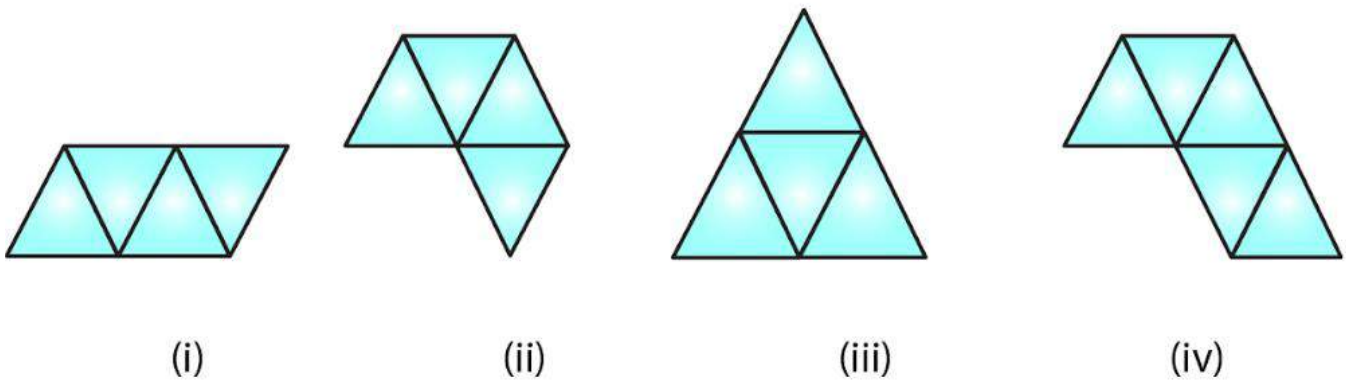
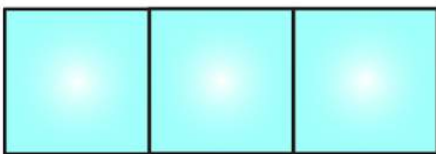


Fig. 23

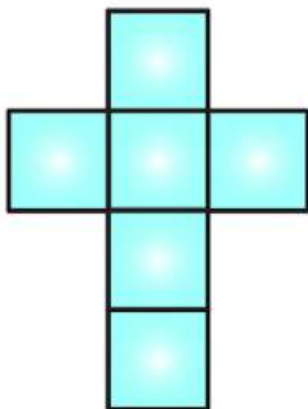
**Solution:**

For making a tetrahedron, only (i) and (iii) are suitable nets.

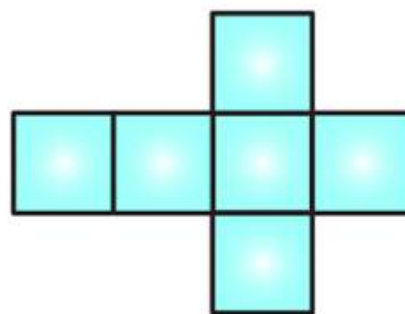
5. Here is an incomplete net for making a cube. Complete it in at least two different ways.



**Solution:**



(i)



(ii)