



# MATHS

## NCERT - NCERT Maths(TELUGU)

### UNDERSTAND 3D AND 2D SHAPES

**Example**

1. Match the following:

List-I

List-II

A)  $\sin \left\{ \frac{\pi}{3} - \sin^{-1} \left( -\frac{1}{2} \right) \right\}$

1)  $\frac{3 - \sqrt{5}}{2}$

B)  $\cos \left\{ \cos^{-1} \left( -\frac{\sqrt{3}}{2} \right) + \frac{\pi}{6} \right\}$

2) 0

C)  $\sec^{-1} \left( \frac{\sqrt{5}}{2} \right) - \sin^{-1} \left( \frac{1}{\sqrt{5}} \right)$

3) 1

D)  $\tan \left\{ \frac{1}{2} \cos^{-1} \left( \frac{\sqrt{5}}{3} \right) \right\}$

4) -1



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2. If two cubes of dimensions 2 cm by 2cm by 2cm are placed side by side, what would the

dimensions of the resulting cuboid be?



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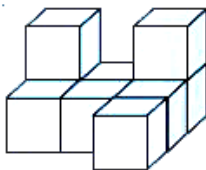
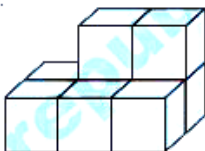
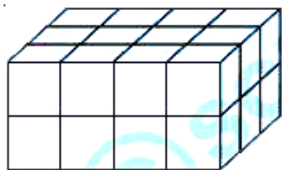
**Try This**

1. Subtract  $4a - 7ab + 3b + 12$  from  $12a - 9ab + 5b - 3$



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2. Estimate the number of cubes in the following arrangements.



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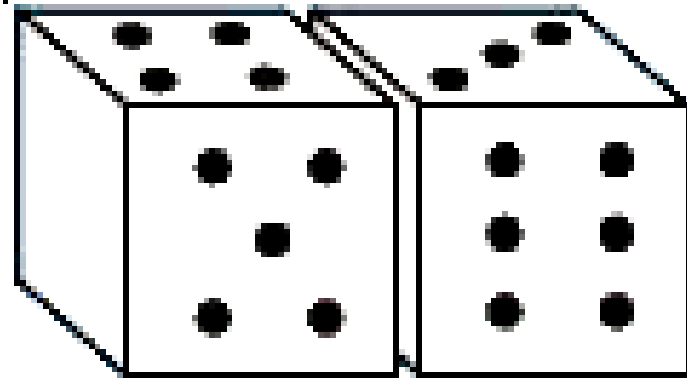
3. Two dice are placed side by side as shown.

Can you say what the total would be on the faces opposite to them?

$$5 + 6$$

(Remember that in a dice the sum of numbers

on opposite faces is 7)



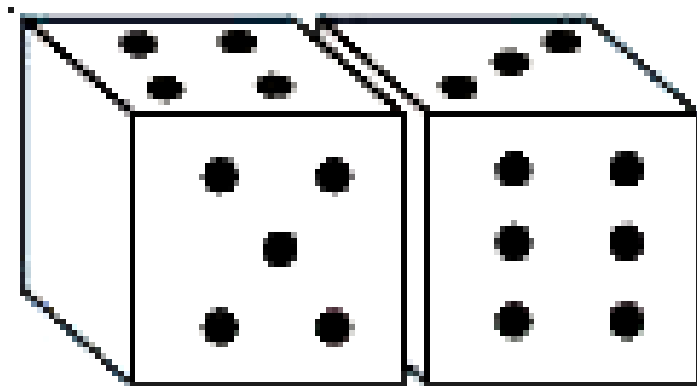
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4. Two dice are placed side by side as shown.

Can you say what the total would be on the faces opposite to them?

$$4 + 3$$

(Remember that in a dice the sum of numbers on opposite faces is 7)



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5. Three cubes each with 2 cm edge are placed side by side to form a cuboid. Try to make an

oblique sketch and say what could be its, length, breadth and height.









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## Exercise 1

1. Given below are the pictures of some objects. Categorize and fill write their names according to their shape and fill the table with name of it.



					
Sphere	Cylinder	Pyramid	Cuboid	Cone	Cube

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2. Write name of at least 2 objects from day to day life, which are in the shape of the basic 3D



shapes given below: i) cone ii) cube iii) cuboid  
iv) sphere v) cylinder



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**3.** Write names of at least 2 objects from day-to-day life, which are in the shape of the basic 3D shapes given below:

Cube -----



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4. Write names of at least 2 objects from day-to-day life, which are in the shape of the basic 3D shapes given below:

Cuboid -----



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5. Write name of at least 2 objects from day to day life, which are in the shape of the basic 3D shapes given below: i) cone ii) cube iii) cuboid iv) sphere v) cylinder





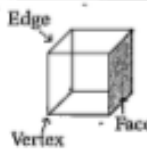
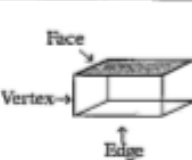

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6. Write name of at least 2 objects from day to day life, which are in the shape of the basic 3D shapes given below: i) cone ii) cube iii) cuboid iv) sphere v) cylinder



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7. identify and state the number of faces, edges and vertices of the figure given below:

	 <p style="text-align: center;"><b>Cube</b></p>	 <p style="text-align: center;"><b>Cuboid</b></p>	 <p style="text-align: center;"><b>Pyramid</b></p>
<b>Faces</b>			
<b>Edges</b>			
<b>Vertices</b>			



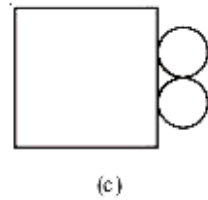
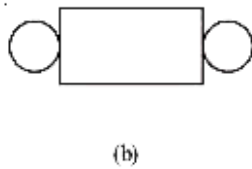
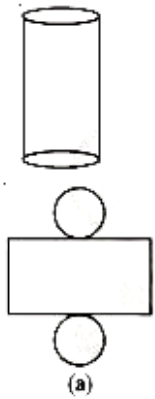
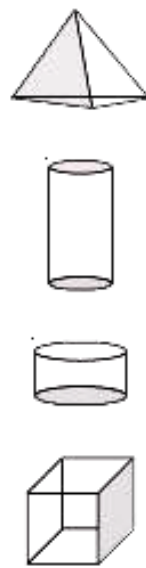
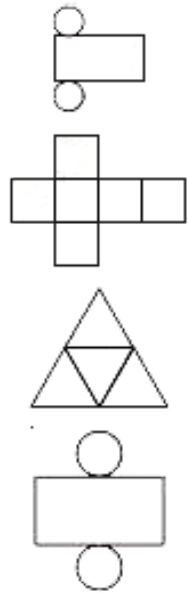
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## Exercise 2

1. Three nets for each shape are given here.

Match the net with its 3-D shape.

3D shapes

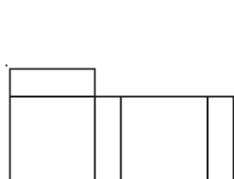
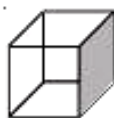
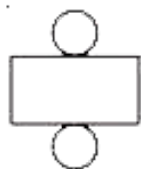
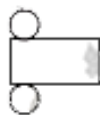


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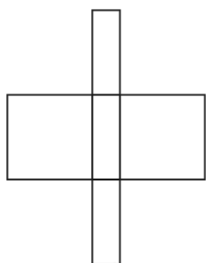
2. Three nets for each shape are given here.

Match the net with its 3-D shape.

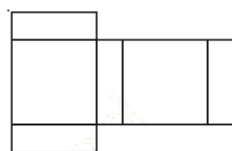
Nets



(a)



(b)



(c)

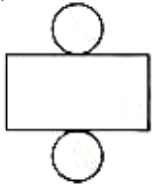
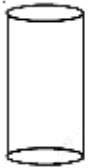
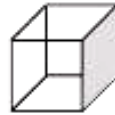
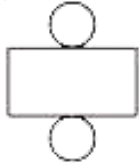
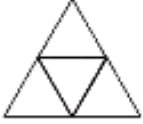
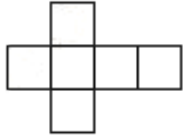
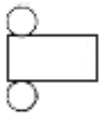


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**3.** Three nets for each shape are given here.

Match the net with its 3-D shape.

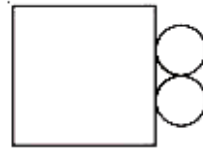
3D shapes



(a)



(b)



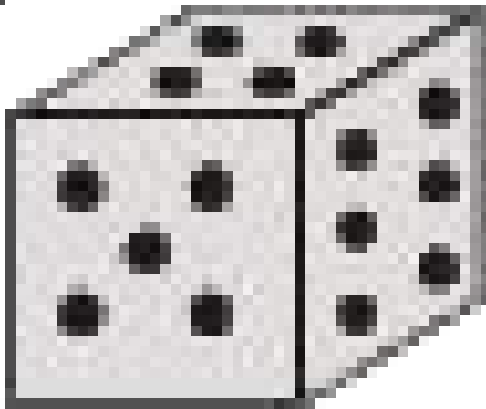
(c)



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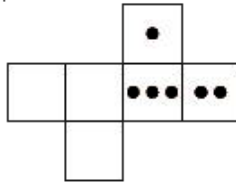
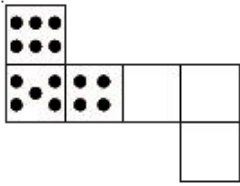


4. A dice is a cube with dots on each face. The opposite faces of a dice always have a total of seven dots on them.



Here are two nets to make dice. Insert the

suitable number of dots in blanks.

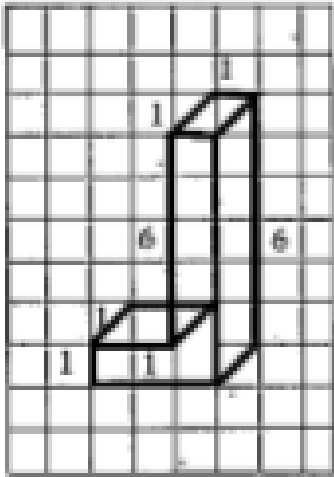


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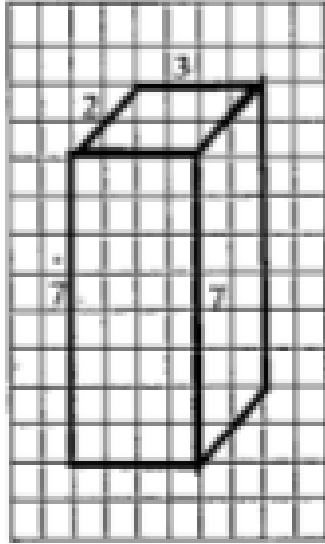
## Exercise 3

1. use an isometric dot paper and make an isometric sketch for one of the given shapes.

i)



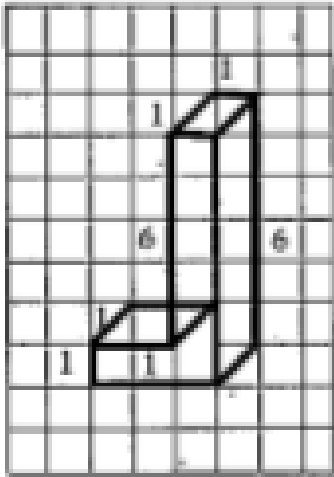
ii)



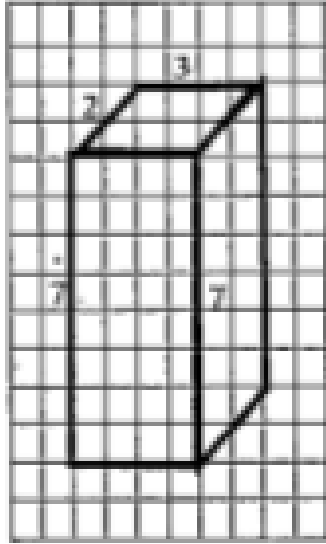
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2. use an isometric dot paper and make an isometric sketch for one of the given shapes.

i)



ii)

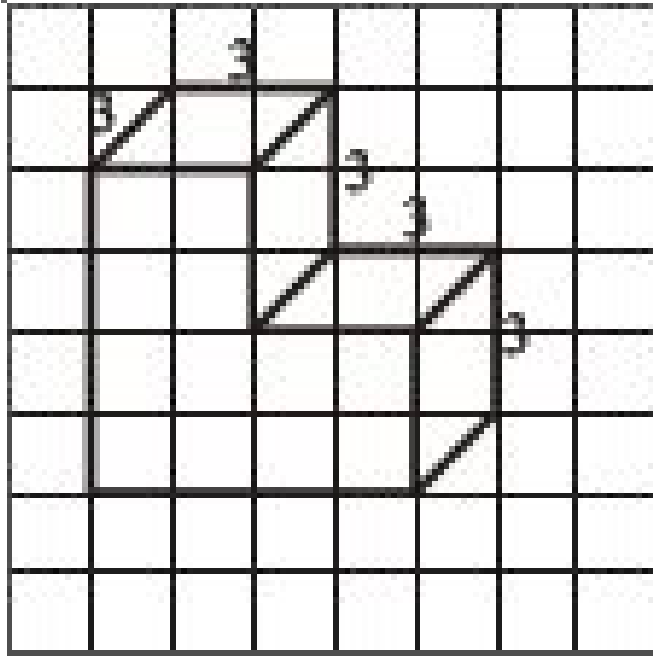


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3. Use an isometric dot paper and make an isometric sketch for each one of the given



shapes.



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5. The dimensions of a cuboid are 5 cm, 3 cm, 2cm. draw these different isometric sketches

of this cuboid.



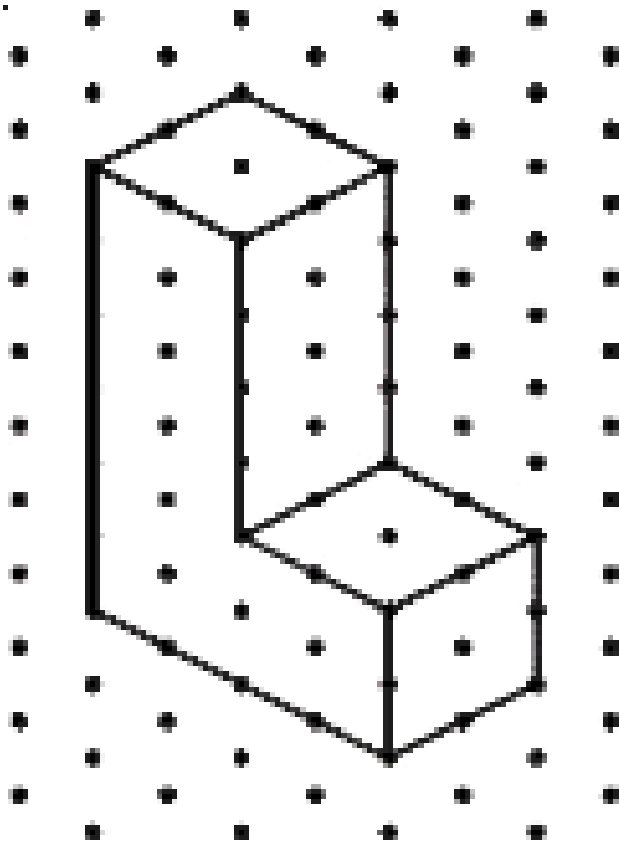
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**6.** Three cubes each with 2 cm edge are placed side by side to form a cuboid. Try to make an oblique sketch and say what could be its, length, breadth and height.



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7. Make an oblique sketch for each of the given isometric shapes.



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8. Give an oblique sketch and an isometric sketch for each of the following a) a cuboid of dimensions 5cm, 3cm and 2cm. b) a cube with an edge 4cm long.



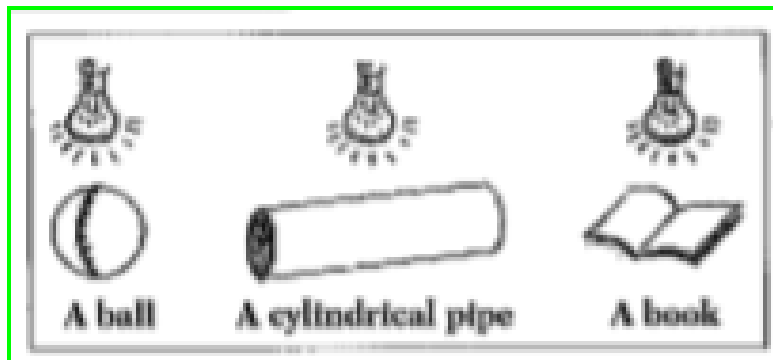
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9. Give an oblique sketch and an isometric sketch for each of the following a) a cuboid of dimensions 5cm, 3cm and 2cm. b) a cube with an edge 4cm long.

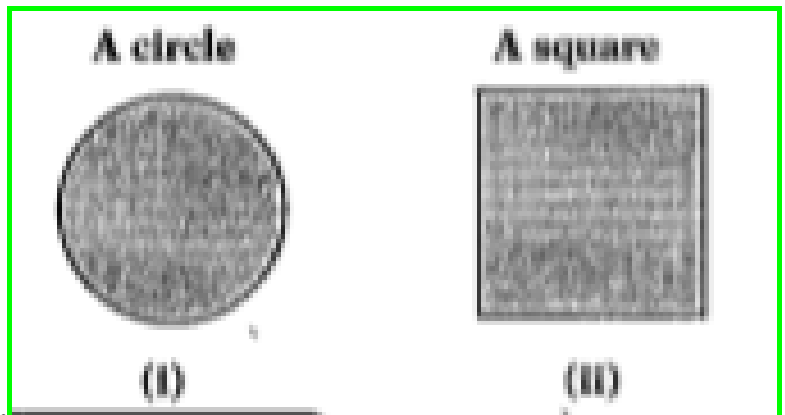


## Exercise 4

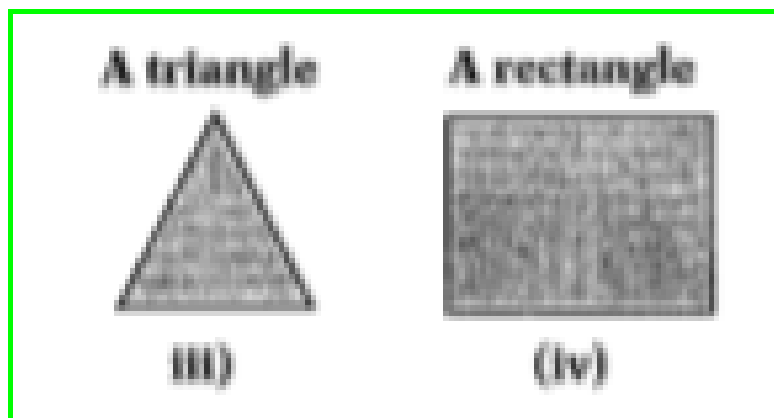
1. a bulb is kept burning just right above the following solids. Name the shape of the shadows obtained in each case. Attempt to give a rough sketch of the shadow.



2. here are some shadows of some 3D objects, when seen under the lamp of an overhead projector. Identify the solids that match each



shadows.

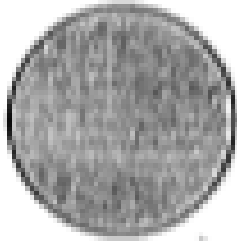




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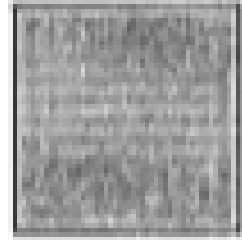
**3.** here are some shadows of some 3D objects, when seen under the lamp of an overhead projector. Identify the solids that match each

**A circle**



**(i)**

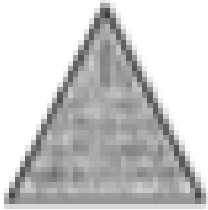
**A square**



**(ii)**

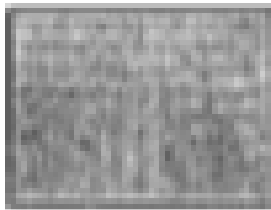
shadows.

**A triangle**



**(iii)**

**A rectangle**



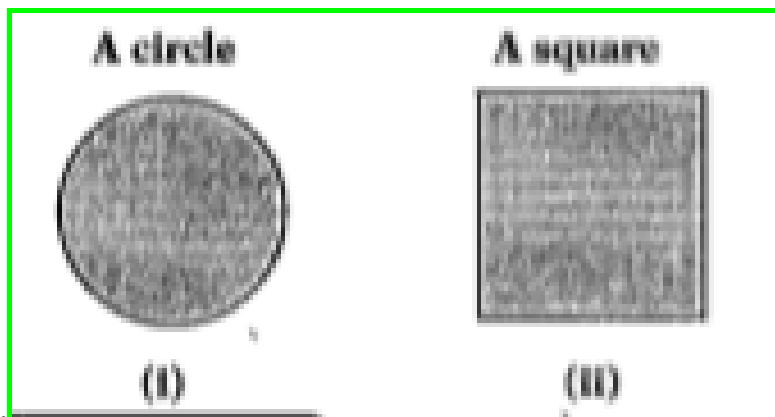
**(iv)**



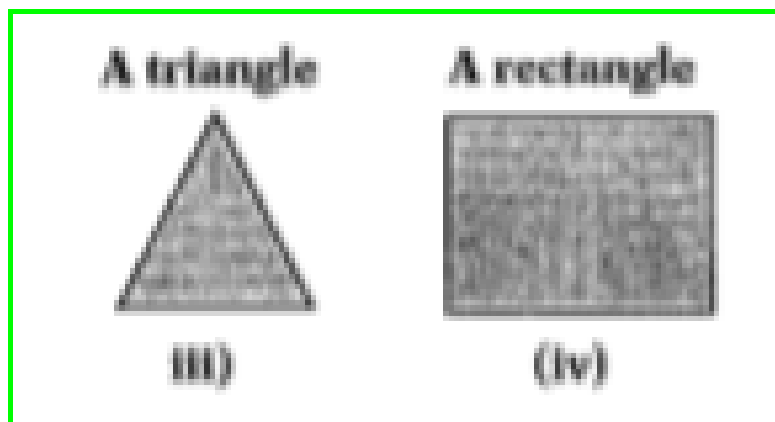
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4. here are some shadows of some 3D objects,  
when seen under the lamp of an overhead

projector. Identify the solids that match each

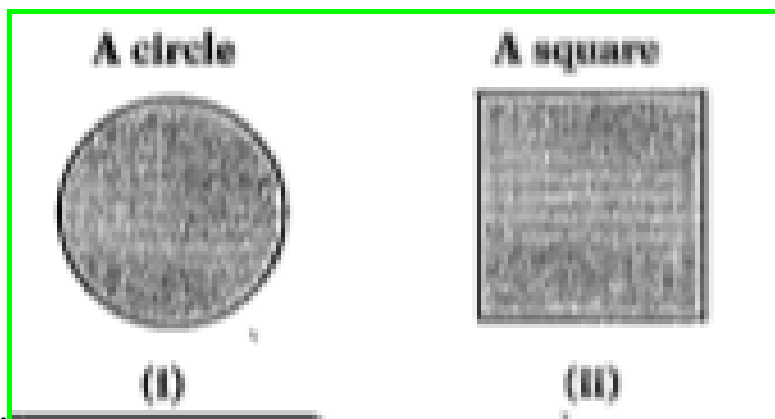


shadows.

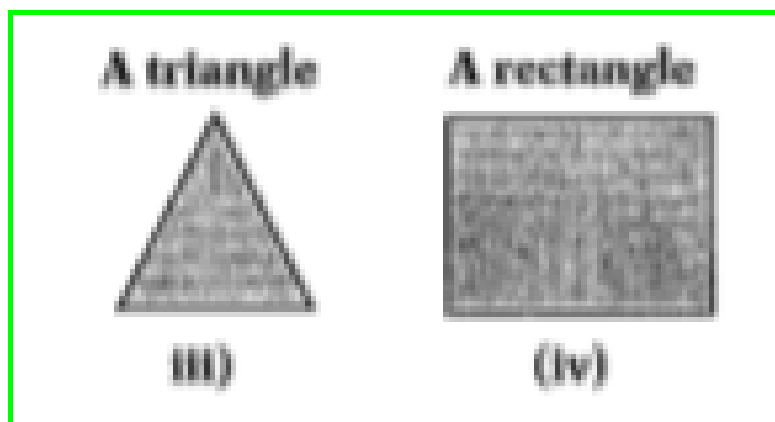


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5. here are some shadows of some 3D objects, when seen under the lamp of an overhead projector. Identify the solids that match each shadows.



shadows.



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