doubtnut
India's Number 1 Education App

MATHS

BOOKS - ICSE

VISUALISING SOLID SHAPES

Example

1. Answer the following from the given figure.

a. How many packets of sugar are there in the shelf?

B. How many more packets of sugar can be kept in the shelf?

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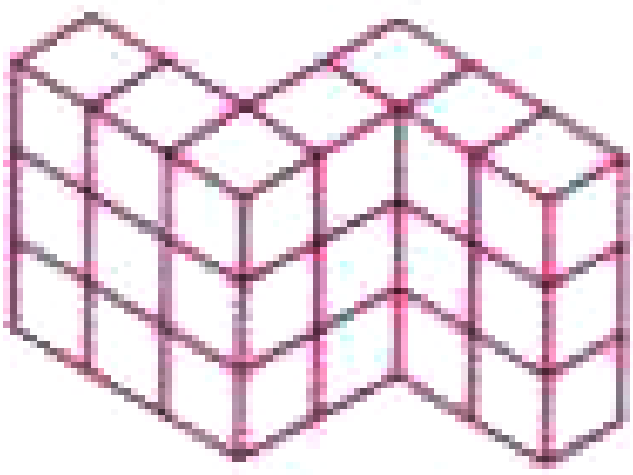
2. How many cubes are there in the given figure?



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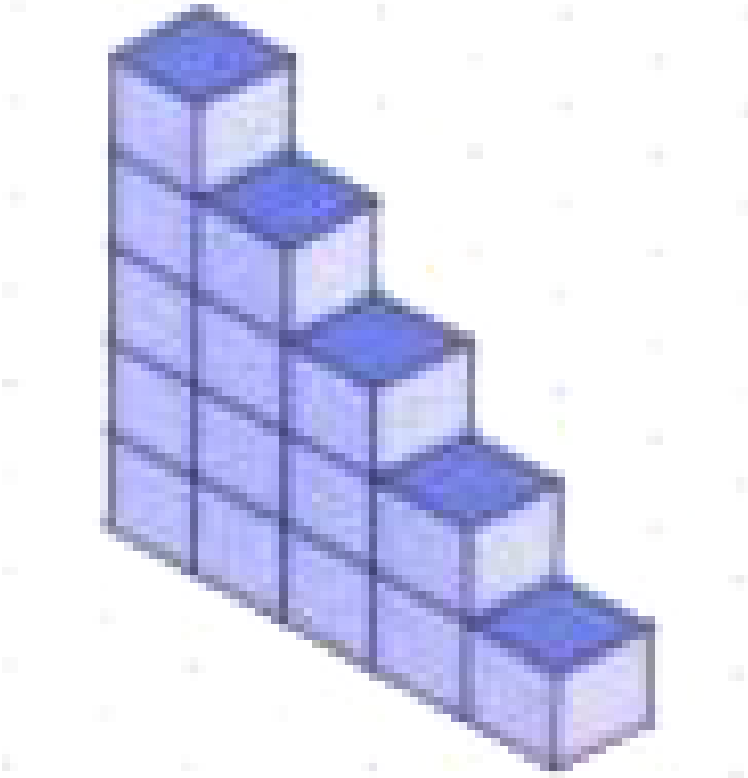
3. Draw the oblique sketch for the following isometric shape:



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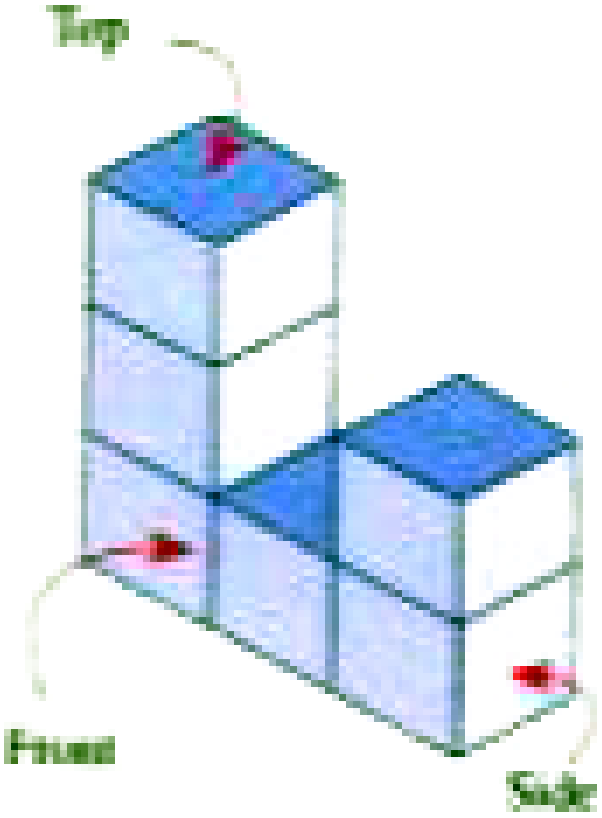
4. Draw the front, top, and side views of the given shape.



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Warm Up Exercise

1. Match the following shapes with their names.

S. No	Name		Shape	S. No	Name		Shape
a.	Cube	i		e.	Cone	v	
b.	Cuboid	ii		f.	Pentagonal prism	vi	
c.	Cylinder	iii		g.	Triangular prism	vii	
d.	Sphere	iv		h.	Triangular pyramid	viii	

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2. Complete the table.

Solid	Plane Faces	Curved Surfaces	Vertices	Edges
Cube				
Cuboid				
Cylinder				
Sphere				
Cone				

Triangular prism				
Hexagonal pyramid				

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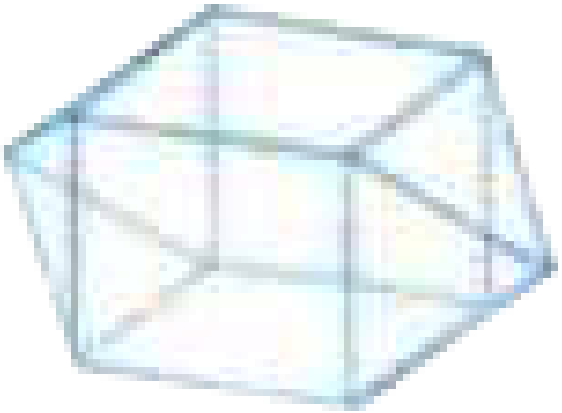
3. Look at the given figure and fill in the blanks that follows.



The solid has _____ vertices, _____ edges, _____faces, _____triangular faces, and _____ square faces.

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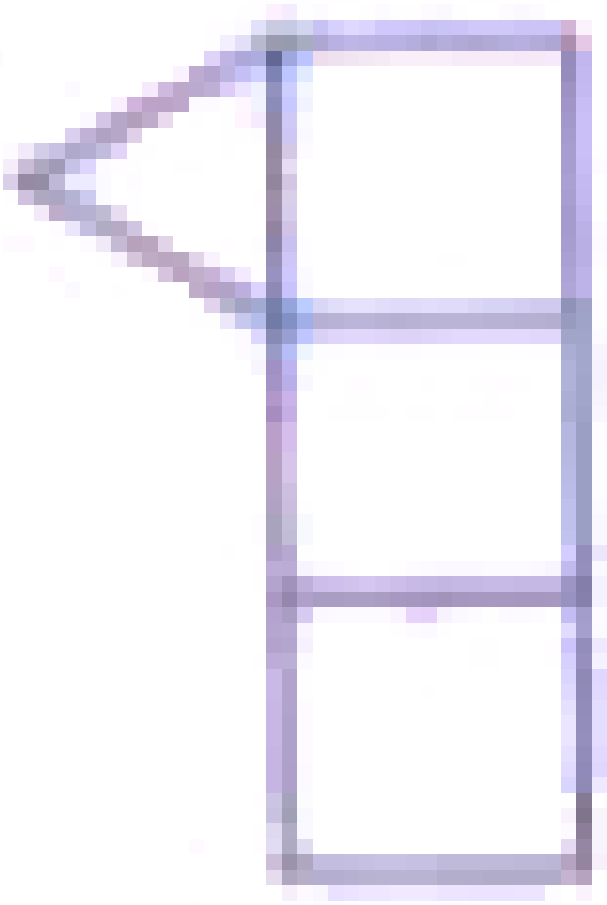
Try This

1. Given is an incomplete net of a triangular prism. Complete it in three different ways.



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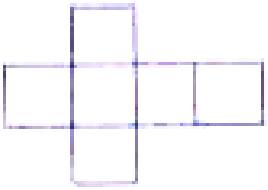
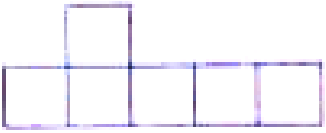
2. Identify which of the following can be used to make a cube.

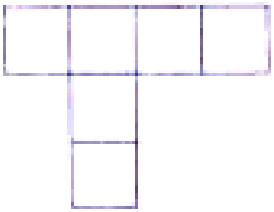
a.



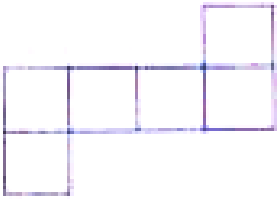
b.



c.

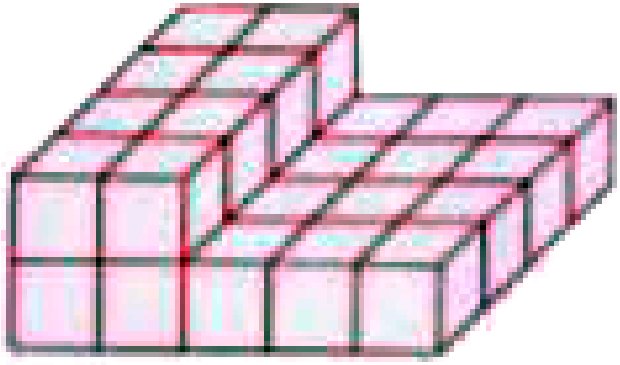


d.



View Text Solution

3. How many cubes are there in the given figure?



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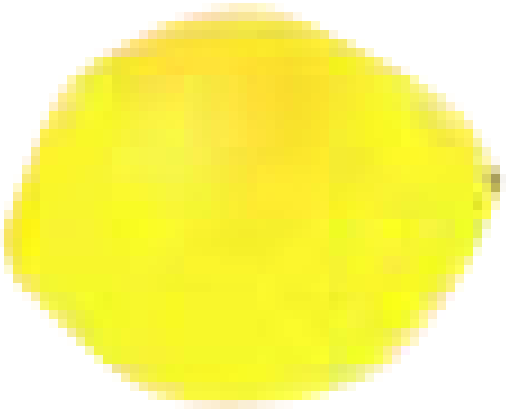
4. What cross section will be obtained if the lemon is cut

1. horizontally? 2. vertically?



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5. Name all the solids that will cast a triangular shadow if the light source is directly overhead.

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Exercise 16 1

1. Which of the following will fold up to form a cube?

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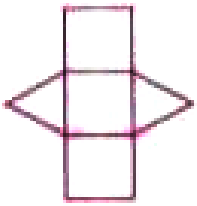
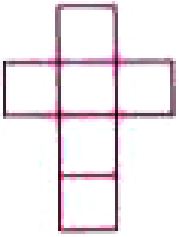
2. Name the solids each of the following nets will fold up to.

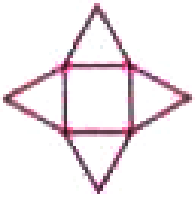
a.



b.

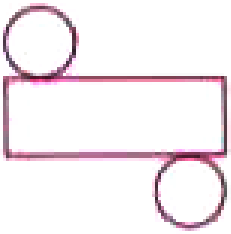


c.



d.

e.



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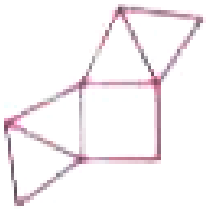
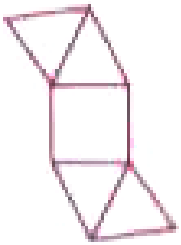
3. Which of the following is not the correct net of a rectangular pyramid?

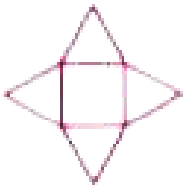
a.



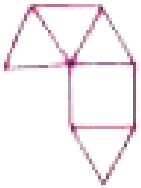
b.



c.



d.



A. A

B. B

C. C

D. D

Answer: D

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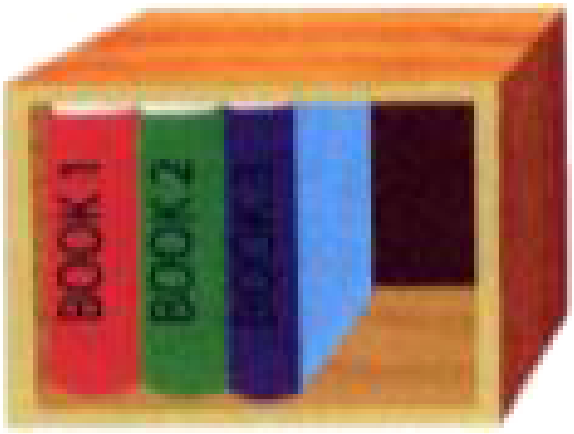
4. How many more books would fit in the shell?



A. 1 books

B. 2 books

C. 3 books

D. 4 books

Answer: B

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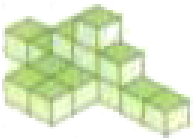
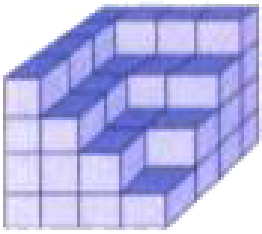
5. Count the number of cubes in the given figures.

a.



b.



A. a. 13 b. 55

B. a. 50 b. 15

C. a. 15 b. 50

D. a. 35 b. 40

Answer: C

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Exercise 16 2

1. Fill in the blanks.

In an oblique sketch, only the _____ and the _____ faces of the solid are proportional to the solid which is being sketched.

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2. Fill in the blanks.

In an isometric sketch, _____ the dimensions of the solid are proportional.

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3. What is the difference between the oblique and the isometric sketches?

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4. Draw an oblique sketch of a cuboid of sides 6 cm by 3cm by 2 cm.

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5. Make an isometric sketch of a cuboid with sides 3cm by 5 cm by 8cm.

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6. Draw two different isometric sketches of a cuboid measuring 4cm, 7 cm, and 9 cm.

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7. Two cubes of sides 3cm each are placed side by side. Draw the isometric sketch of the resultant cuboid.

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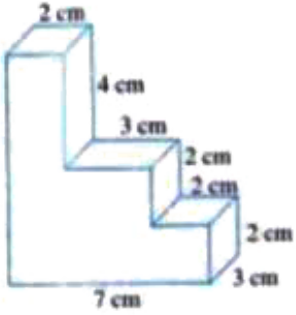
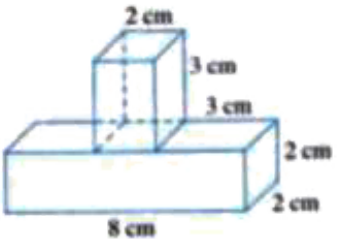
8. Draw the isometric sketch for the following shape.





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9. Make an oblique sketch of a triangular prism with base a right-angled triangle with sides 5 cm, 12 cm, and 13 cm and length 15 cm.

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10. Make an oblique sketch of a triangular prism with an equilateral triangle of sides 5cm as the base and length 8 cm.

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11. Draw an isometric sketch of triangular prism with a right-angled triangle with sides, 5cm, 12 cm, and 13 cm as base and height 6 cm.

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12. Make an isometric sketch of a triangular prism of height 6cm and base an isosceles triangle which has the unequal side of 4 cm and height 5cm.

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13. Draw the isometric sketch of a rectangular pyramid with base measuring 4 cm by 4 cm and height 5 cm.

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14. What cross section is obtained if the following shapes are cut a. horizontally? b.

vertically?

i.

ii.

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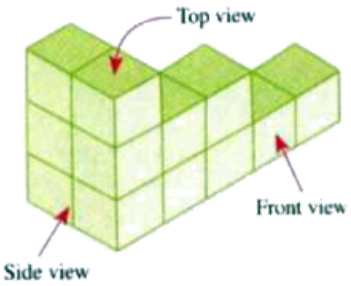
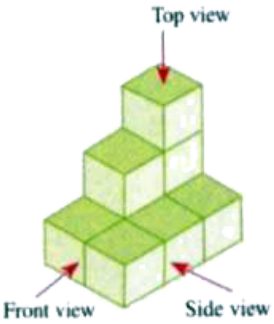
15. Draw the top, side, and front views of each of the given solids.

a.



b.



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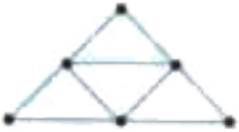
Revision Exercise

1. Which of the following is a correct net for a tetrahedron/triangular pyramid?

a.

b.

c.



d.

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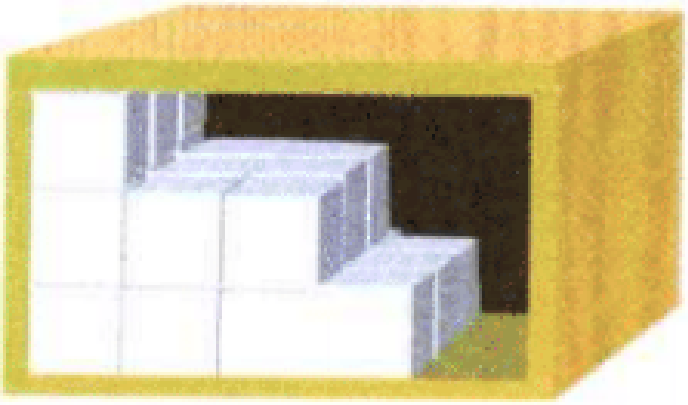
2. Answer the following questions using the given figure.

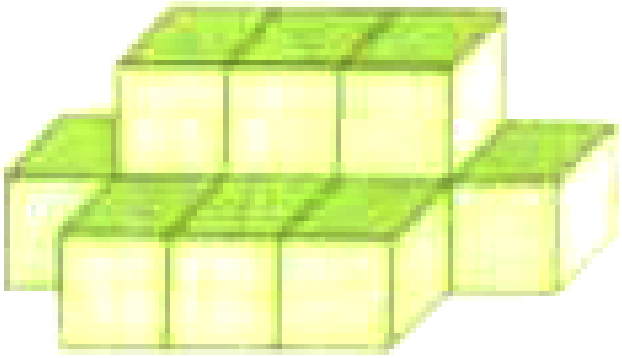


a. How many boxes are there in the shelf?

b. How many more boxes can be filled in the shelf?

View Text Solution

3. Count the number of cubes in the given figure.



A. 11

B. 12

C. 13

D. 14

Answer: A

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4. Two cubes of sides 2 cm each are placed one on top of the other. Draw the isometric sketch of the resultant cuboid.

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5. The sides of the cuboid measure 4cm. 5cm, and 7 cm. Draw two different isometric sketches for this shape?

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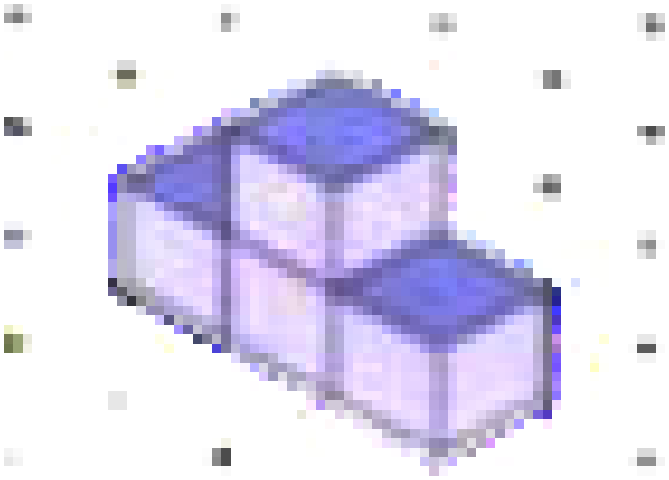
6. Draw the oblique sketch for the following isometric shape?



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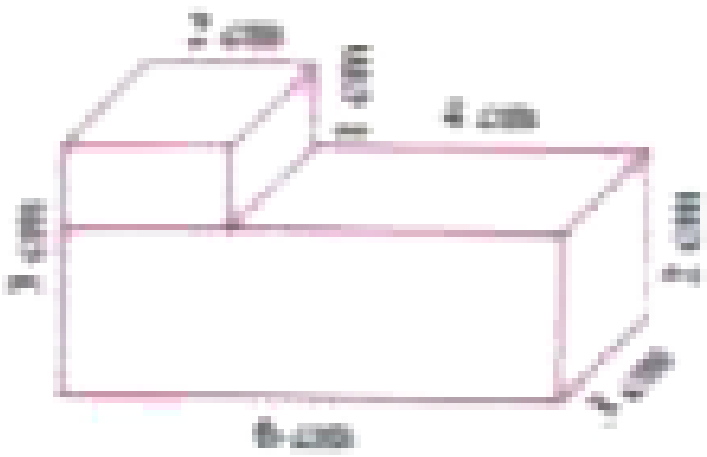
7. Draw the isometric sketch of the given figure.



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8. Make an oblique sketch of a triangular prism with an equilateral triangle of sides 3cm as the base and length 7 cm.

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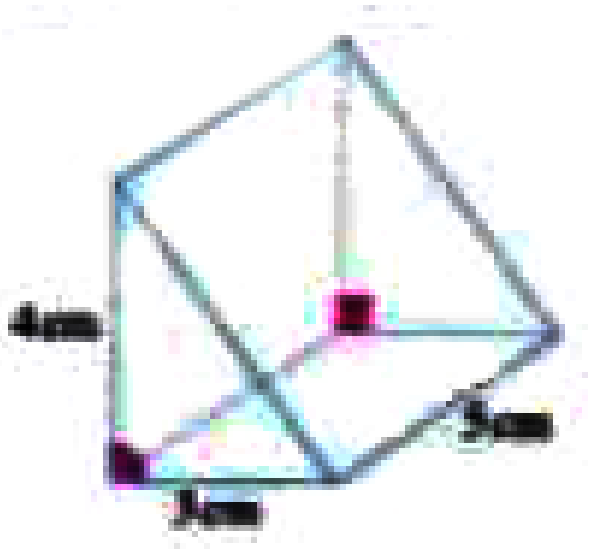
9. Make an isometric sketch of the given prism.



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10. Draw the isometric sketch of a rectangular pyramid with rectangular base measuring 4cm by 6 cm and height 7 cm.

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11. What is the cross section of a rectangular prism when it is cut: a. horizontally? b. vertically?

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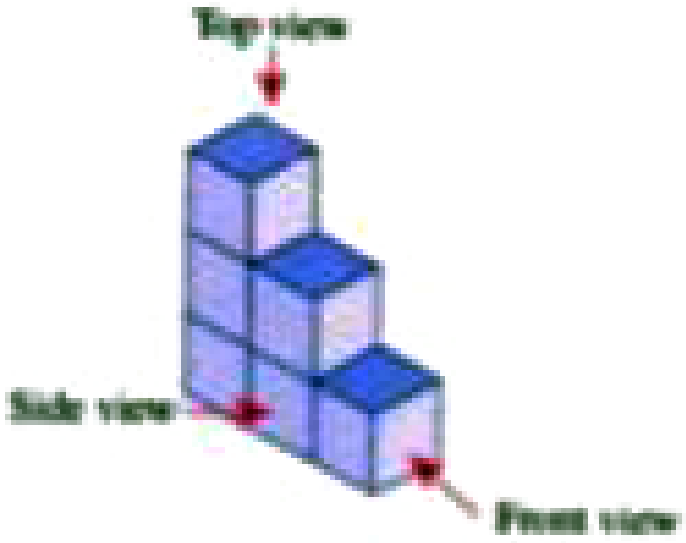
12. Draw the top, side, and front views of the given figure.



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13. Name three solids that can have their shadows in the given shapes, if the light source is directly overhead:

a. circle b. rectangle

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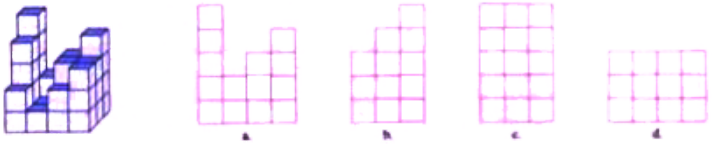
Challenge

1. Look at the given solid and choose its front view, side view, and top view from the four given figures.



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Unit Practice Paper Geometry Lines And Angles

1. Given than an angle is 27°. Find its complement.

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2. Two angles in the ratio 7: 8 are supplementary. Find the angles.

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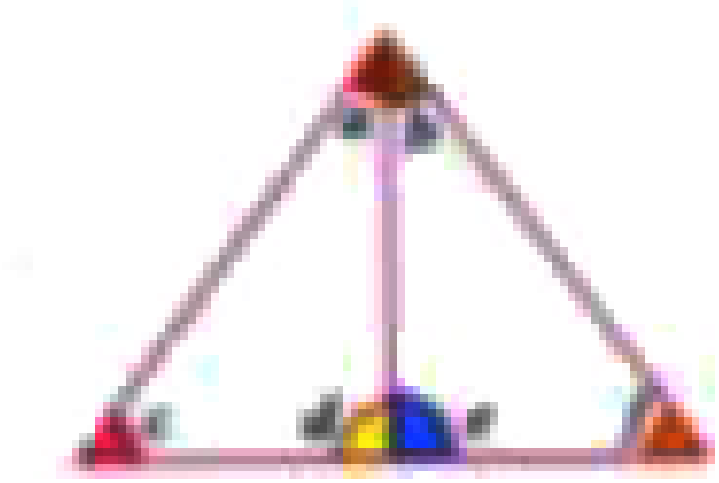
3. Write all pairs of adjacent angles in Figure 1.



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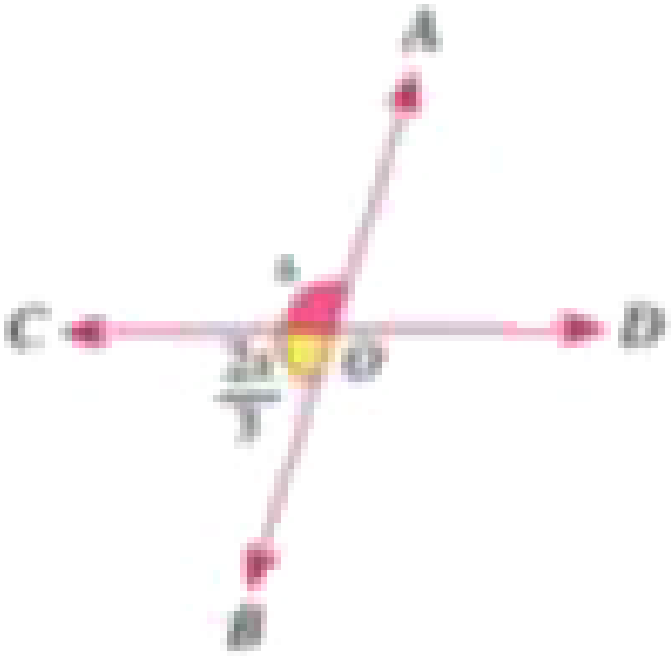
4. Find the measure of all the angles in Figure 2.



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5. Find x in the given figure.

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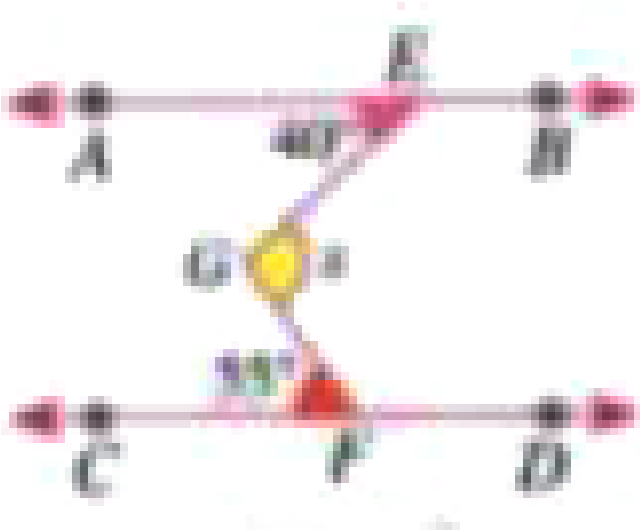
6. In Figure 3, given AB || CD, find the value of x.



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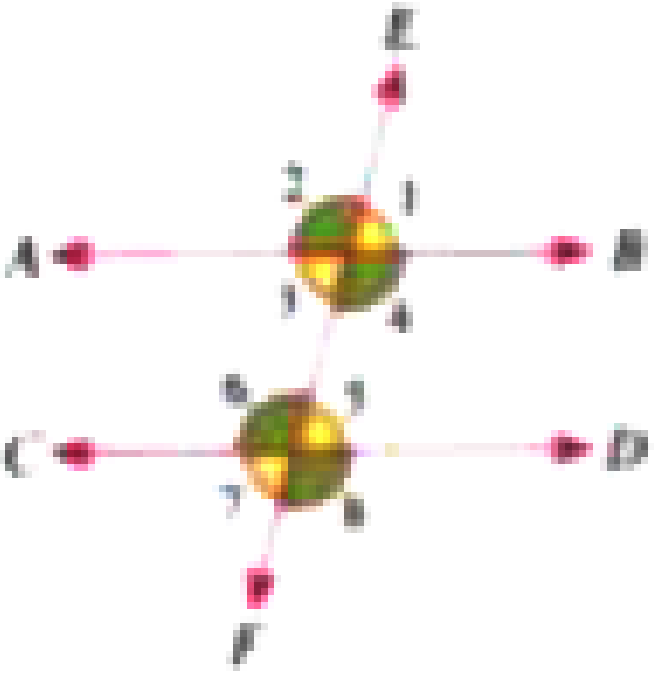
7. In Figure 4, if AB || CD, given that $\angle 4 = (3x + 20)^\circ$ and $\angle 6 = (4x - 10)^\circ$,

find all the angles.



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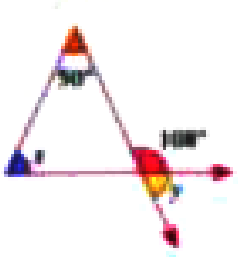
Unit Practice Paper Geometry The Triangle And Its Properties

1. Find the values of x and y in the given figures.



b.

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2. The sides of a triangle are 7 cm, 11 cm, and acm, where a is a whole number. Find the minimum and maximum value that a can take.

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3. Find the third side of an isosceles triangle whose two sides are 10 cm and 5cm.

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4. Three numbers a, b, and c form a Pythagorean triplet. If a = 35, b = 37, find c if c is the shortest of the three numbers.

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5. Find the measure of the diagonal of a rectangle of length 24cm and breadth 7 cm.

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6. Two poles of height 12 feet and 20 feet are standing at two ends of a 15 feet wide street. Find the distance between their tops.

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Unit Practice Paper Geometry Congruence Of Triangles

1. Which of the following are valid criteria for establishing congruency between two triangles.

a. ASA b. AAA c. SAS d. SSS e. SSA

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2. Show that the angles opposite to the equal side of an isosceles triangle are equal by

drawing the altitude through the vertex to the base. What congruence criterion will you use to prove the required result?

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3. Prove that $\Delta AXB \cong \Delta DXC$.

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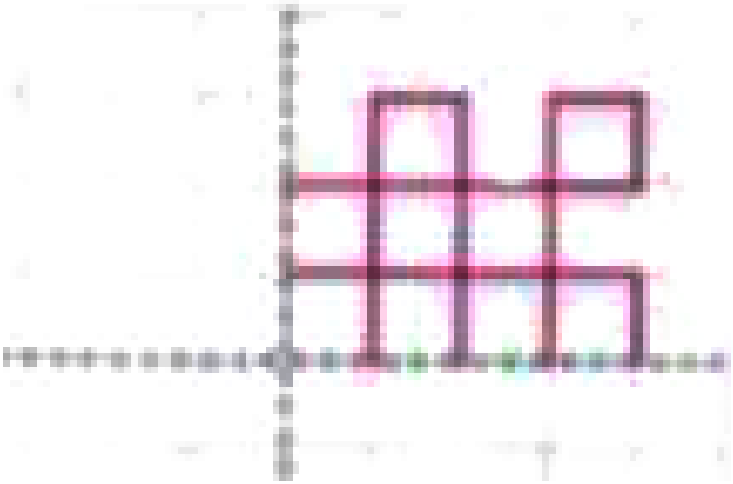
Unit Practice Paper Geometry Symmetry

1. Complete the given shape alongside about the dotted lines of symmetry.



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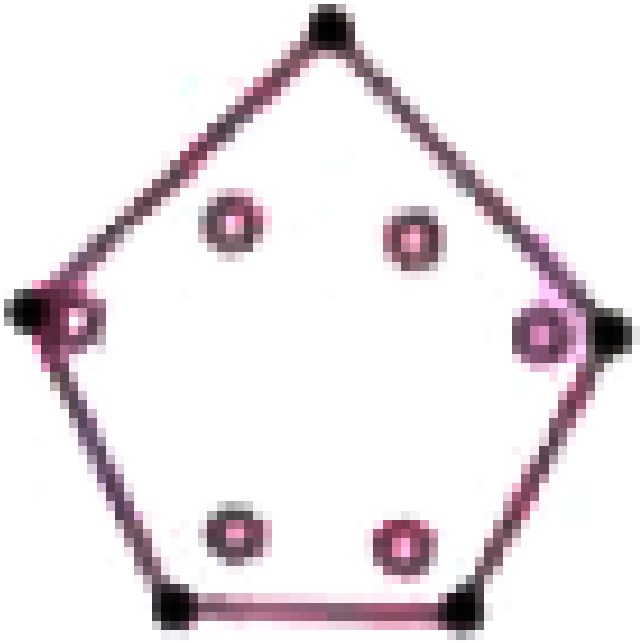
2. The given figure shows the unfolded sheet of paper after holes have been punched on

the folded paper. Find the line of symmetry.



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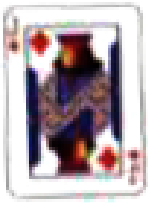
3. Write the number of lines of symmetry, the order of rotational symmetry, and the angle of

rotational symmetry of the following figures.

a.

b. 

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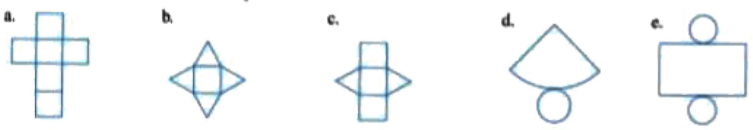
Unit Practice Paper Geometry Visualising Solid Shapes

1. Which solid shape can be formed by each of the following nets?



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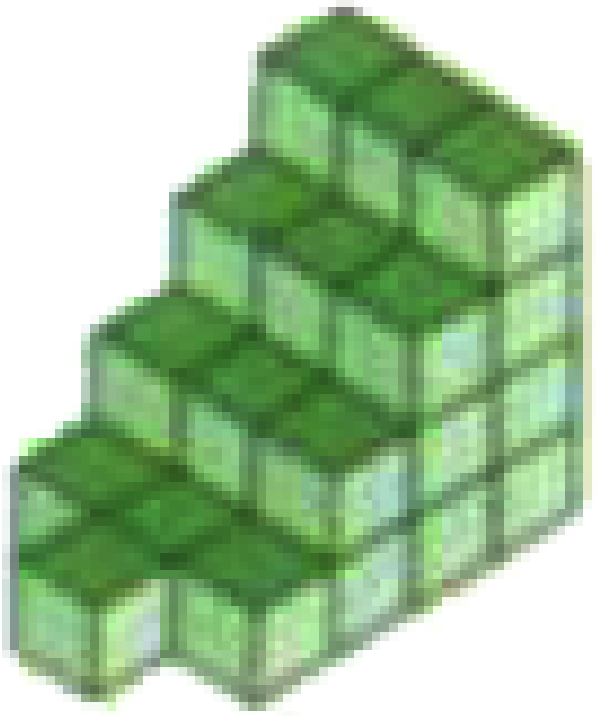
2. How many cubes are there in the given figure.



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3. Draw the isometric sketch of a cuboid with sides 5 cm by 6cm by 8cm in two different ways.

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4. Draw the oblique sketch of a triangular prism with length 7 cm and base an isosceles triangle which has unequal side of 4 cm and height 5 cm.

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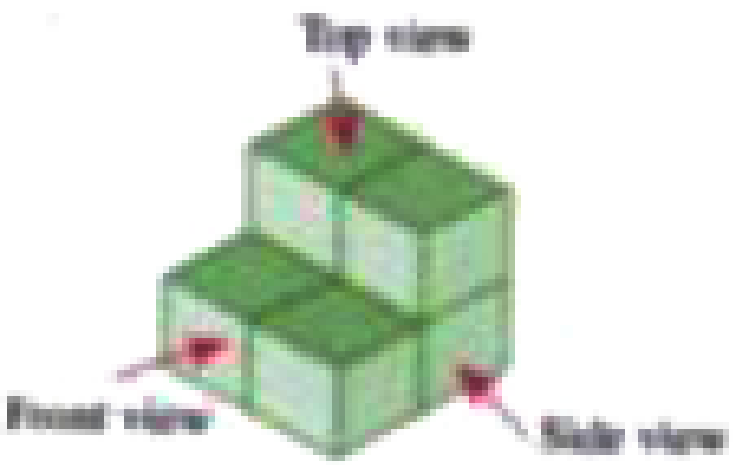
5. Draw the top, front, and side views of the given shape.



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6. Write the cross sections obtained when:

a. a cylinder is cut: i. horizontally along the base ii. vertically along its height

b. a pentagonal pyramid is cut: i. horizontally along its base ii. vertically along its apex

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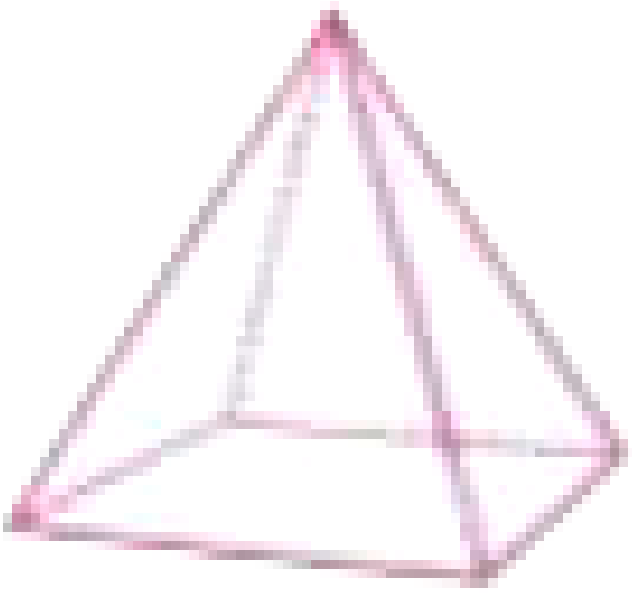
7. What will be the shape of the shadow of the following solid when light falls on it:

a. from the top? b. from the front?



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