	INDIAN SCHOOL AL WADI AL KABIR	
Class: XII	**Department: SCIENCE – 2023-2024** **SUBJECT: ENGINEERING GRAPHICS**	**Date of Completion: 09.05.23**
Worksheet No:1 **With Answers**	**Topic: ISOMETRIC PROJECTION**	**Note: A4 FILE FORMAT**
NAME OF THE STUDENT:	**CLASS: XII SECTION:C**	**ROLL NO:**

MULTIPLE CHOICE QUESTIONS

1. _____is the projection used in engineering practices.

a) Isometric projection

b) Oblique projection

c) Perspective projection

d) Inclined projection

2._____projection gives the true size of the object.

a) Isometric

b) orthographic

c) Oblique

d) Perspective

3.Isometric projection comes under which category of projections----------

a) Axonometric projection

b) Perspective projection

c) Oblique projection

d)None of the above

4.The isometric length of 70 mm is _____.

a) Equal to true 70 mm

b) Less than true 70 mm

c) More than true 70 mm

d) Equal to true 100 mm

5.Which is the correct sequence in case of first angle method of projection?

a) Observer, Plane of projection, Object

b) Observer, Object, Plane of projection

c) Object, Plane of projection, Observer

d) Object, Observer, Plane of projection

6.The angle difference between true scale and isometric scale is -------

a)30 degree

b) 15 degree

c)45 degree

d) None of the above

7. Name the type of line which is used for dimensioning.

a) Small dash line

b) Chain line

c) Wavy line

d) Thin continuous line

8.In isometric projection all the three principal axes are inclined at an angle of -------

a)120 degree

b)45 degree

c)30 degree

d) 60 degree

9. The isometric projection of a sphere is --------

a) Ellipse

b) circle

c) Sphere

d) None of the above

10. The isometric length is measured in isometric scale at an angle of ----------

a) 90 degree

b)45 degree

c) 30 degree

d) 20 degree

11. The true length is measured in isometric scale at an angle of ----------

a) 15 degree

b) 90 degree

c) 45 degree

d) 30 degree

12.The isometric projection of a circle is --------

a) circle

b) Sphere

c)Ellipse

d) None of the above

13.The isometric view is the drawings with -----

a) Reduced scale

b) Actual scale

c) Vernier scale

d) Isometric scale

14.Isometric projection is smaller than actual drawings up to the value --------

a) 82 %

b)90 %

c)75%

d)None of the above

15. _____ resembles an inverted solid.

a) A cone filled with ice-cream

b) A glass prism

c) Pyramid of Giza

d) A cylindrical glass tumbler

WORKSHEET PRACTICE QUESTIONS

SINGLE SOLIDS

1. Draw the isometric projection of a cylinder of 75 mm and diameter of 50 mm resting on its base keeping the axis parallel to VP.

2. Draw the isometric projection of an equilateral triangular prism of 50 mm base side and 75 mm axis resting on its base in HP with one of its base edge parallel to VP in front.

3. Draw the isometric projection of an inverted hexagonal pyramid of base edge 30 mm and height of 60 mm keeping two of its base side parallel to the VP.

4. Draw the isometric projection of cone of diameter 40 mm and axis of 60 mm resting on its base perpendicular to H.P.

5. A Pentagonal prism of base side of 25 mm and axis length of 55 mm is resting on its face with its axis parallel to both H.P and V.P. Draw its isometric projection.

6.A hexagonal prism of base side 30 mm and height of 70 mm resting on its face on H.P. with two of its bases are parallel to V.P. Draw its isometric projection, indicate the direction of viewing and give all the dimensions.

7.Draw the isometric projection of a sphere of diameter 50 mm.

8. Draw the isometric projection of a hemisphere of 60 mm diameter resting on its curved surface on HP.

9. Draw the isometric projection of an inverted pentagonal pyramid of base side 30 mm and axis of 60 mm resting on its base on H.P. with one of its base side parallel to VP and nearer to the observer.

10. Draw the isometric projection of a cube of 50 mm side when it rests on HP on one of square faces such that two of the base edges are parallel to VP.

COMBINATION OF SOLIDS

1. Draw an isometric projection of hemisphere resting centrally on its curved surface, on the top horizontal rectangular face of an equilateral triangular prism, keeping two triangular faces parallel to the VP. Side of equilateral triangle = 50mm, length of the prism = 70 mm and diameter of the hemisphere = 60 mm.

2. Draw an Isometric Projection of 32 mm cube resting centrally on the top face of an equilateral triangular prism having 50 mm base side and height = 30 mm. One rectangular face of the prism is away from the observer and kept parallel to the V.P.

3. Draw an Isometric Projection of a vertical regular pentagonal pyramid resting centrally, having one base edge away from the observer parallel to V.P., on top of a vertical cylinder. Side of the pentagon = 32 mm, height of pyramid = 50 mm, diameter of cylinder = 76 mm and height of cylinder = 40 mm.

4.Draw an Isometric Projection of a sphere resting centrally on a rectangular face of a horizontal hexagonal prism having its hexagonal ends perpendicular to V.P. Side of hexagon = 30 mm, length of the prism = 80 mm and diameter of sphere = 60 mm.

5. Draw an Isometric Projection of a vertical regular hexagonal pyramid resting vertically and centrally having two of its base edges perpendicular to V.P. On the top rectangular face of a horizontal square prism with its square ends perpendicular to V.P. Side of the square = 50 mm, length of the prism =100 mm, side of the hexagon = 30 mm and height of the pyramid = 60 mm.

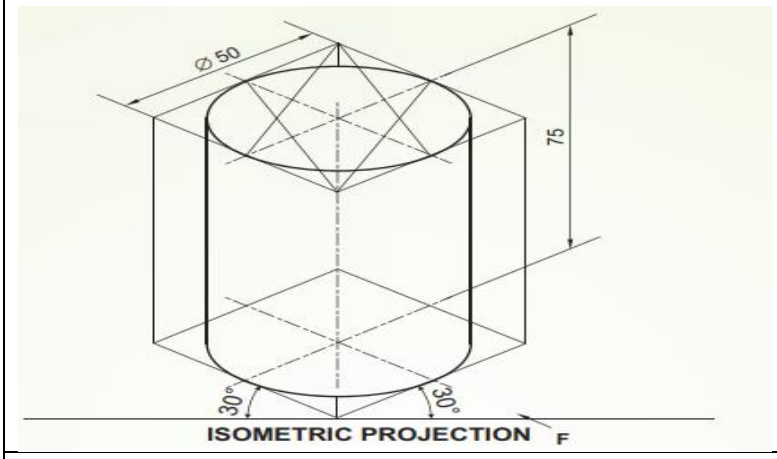
6. Draw an Isometric Projection of a right circular cone resting vertically and centrally on the top horizontal rectangle of a pentagonal prism having its axis parallel to H.P. and V.P. both. Side of pentagon = 34 mm, length of the prism = 80 mm, diameter of the cone = 44 mm and height of cone = 60 mm.

ANSWERS – MULTIPLE CHOICE QUESTIONS

1. a) Isometric projection
2. b) Orthographic
3. a) Axonometric projection
4. b) Less than true 70 mm
5. b) Observer, Object, Plane of projection
6. b) 15 degree
7. d) Thin continuous line
8. a)120 degree
9. b) Circle
10. c) 30 degree
11. c) 45 degree
12. c) Ellipse
13. b) Actual scale
14. a) 82%
15. a) A cone filled with ice-cream

SOLUTIONS FOR DRAWINGS
SINGLE SOLIDS

1.



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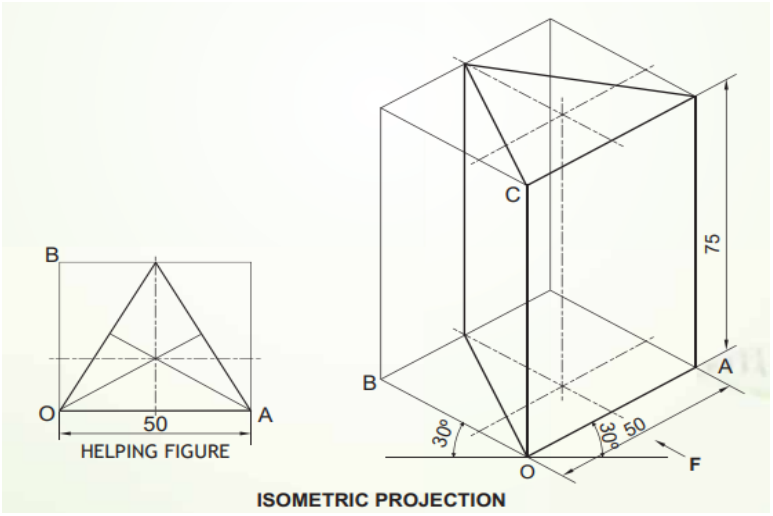

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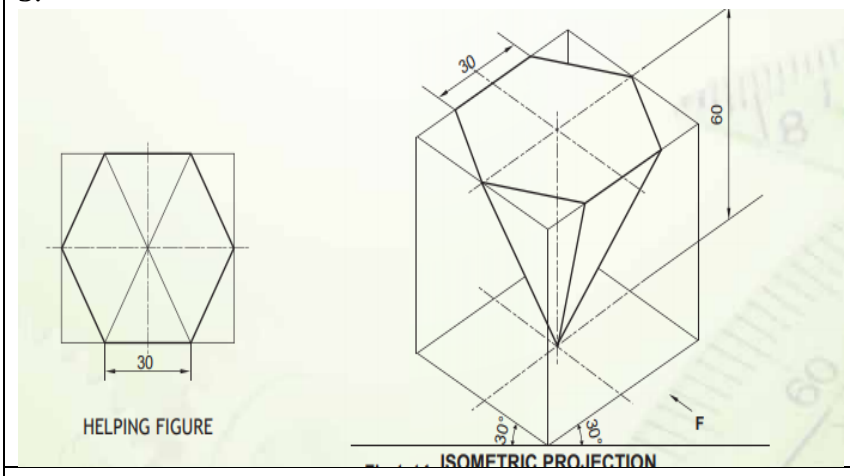
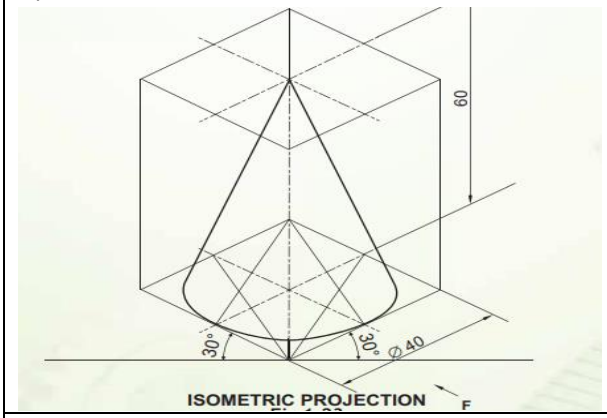
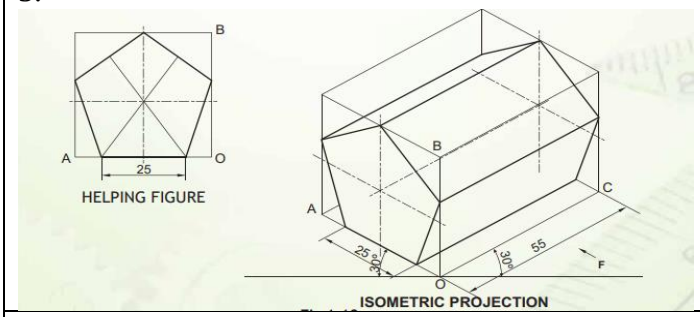

30
60
30
HELPING FIGURE
30°
30°
F
ISOMETRIC PROJECTION

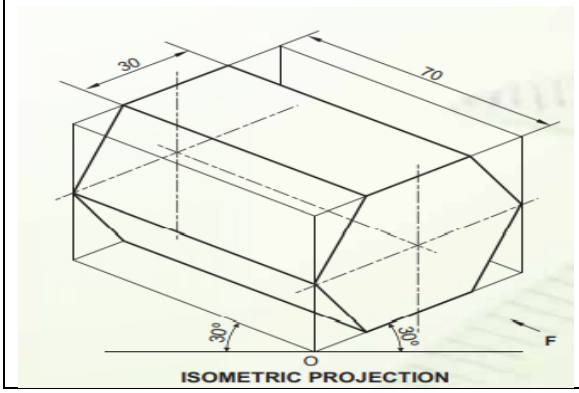
4.


60
30°
30°
∅ 40
ISOMETRIC PROJECTION
F

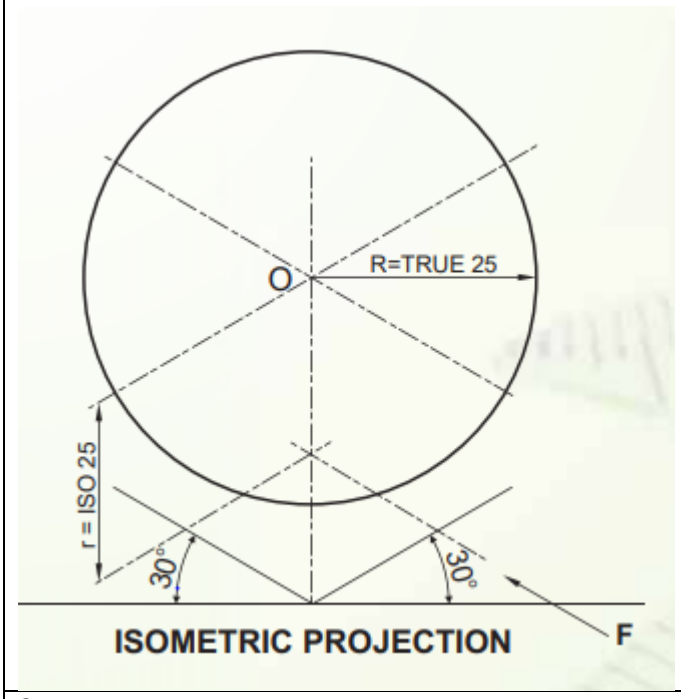
5.


B
A
O
25
HELPING FIGURE
B
A
C
25
30°
55
F
O
ISOMETRIC PROJECTION

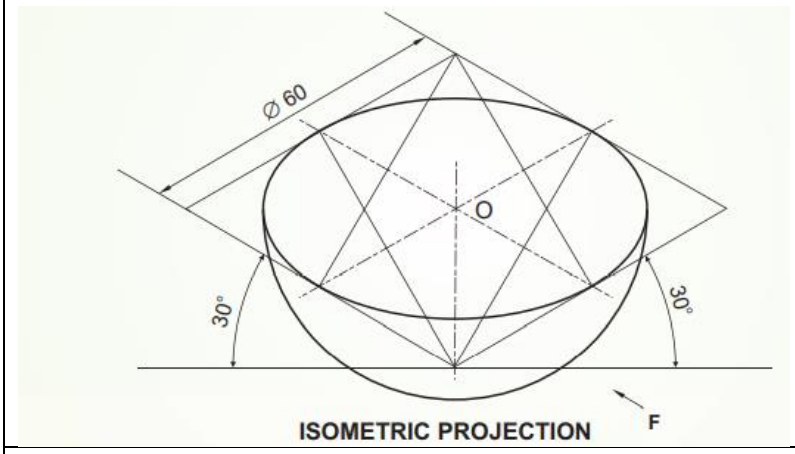
6.


30
70
30°
30°
F
O
ISOMETRIC PROJECTION

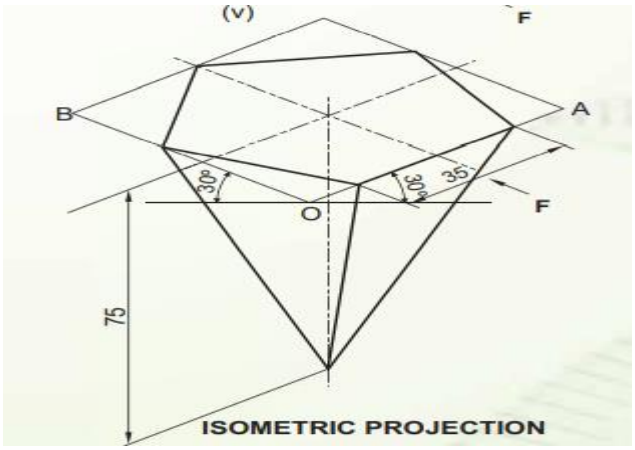
7.


O
R=TRUE 25
r = ISO 25
30°
30°
F
ISOMETRIC PROJECTION

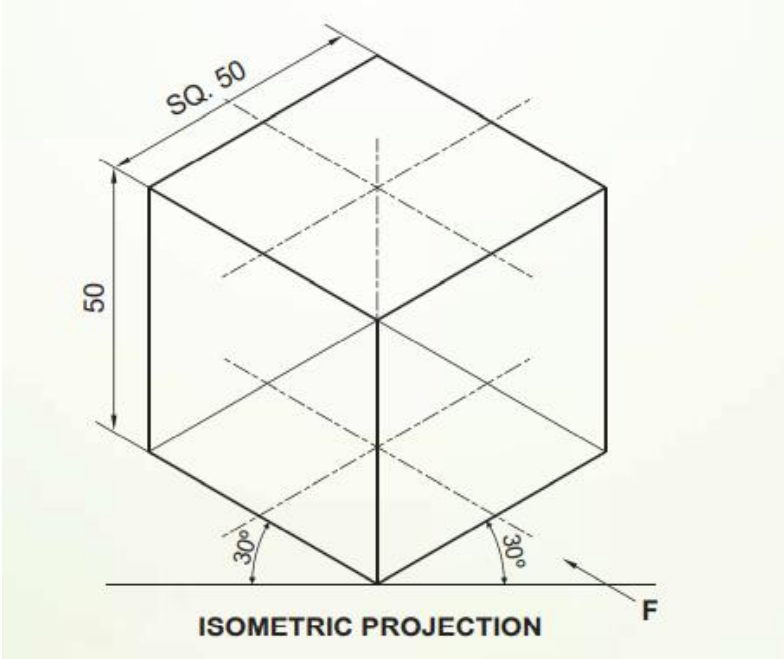
8.


⌀ 60
O
30°
30°
F
ISOMETRIC PROJECTION

9.

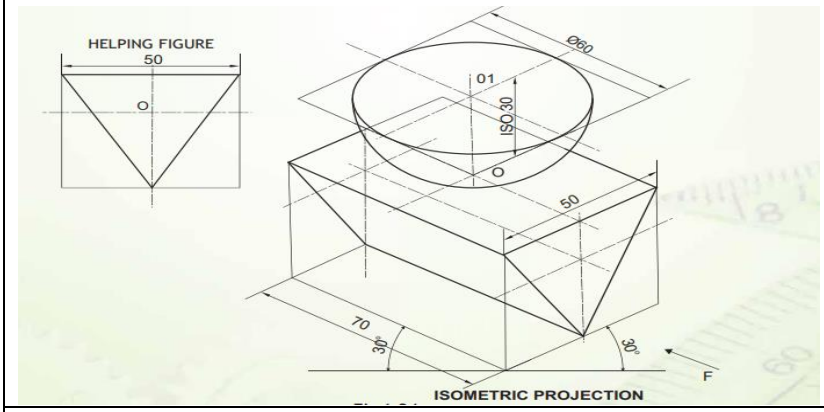

(v)
F
B
A
30°
30°
35°
O
F
75
ISOMETRIC PROJECTION

10,.



COMBINATION OF SOLIDS

1.



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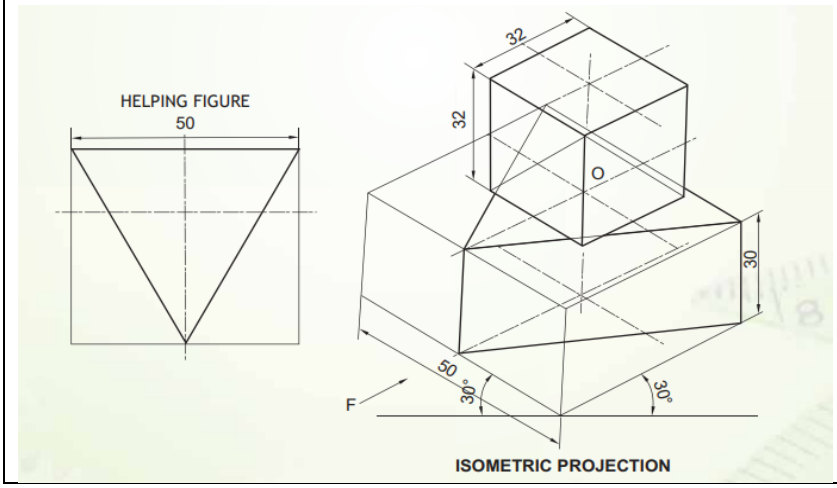

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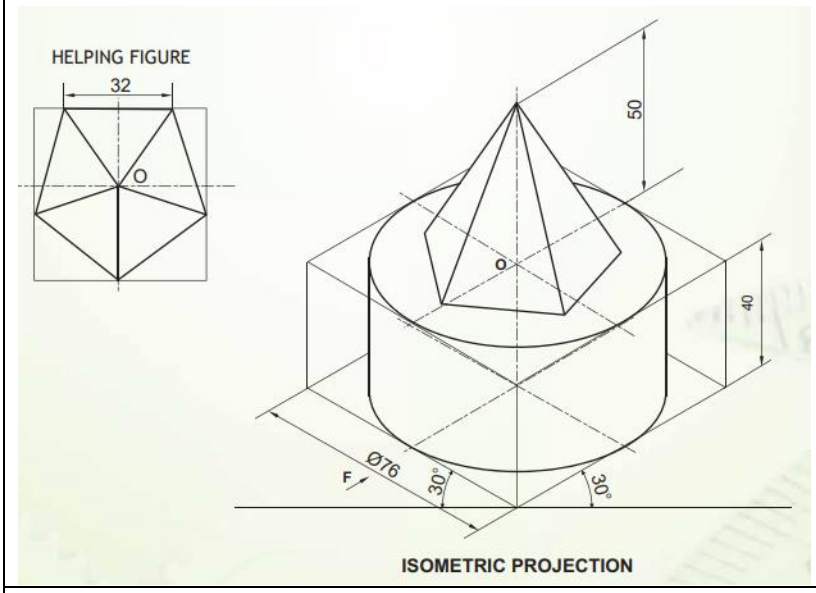
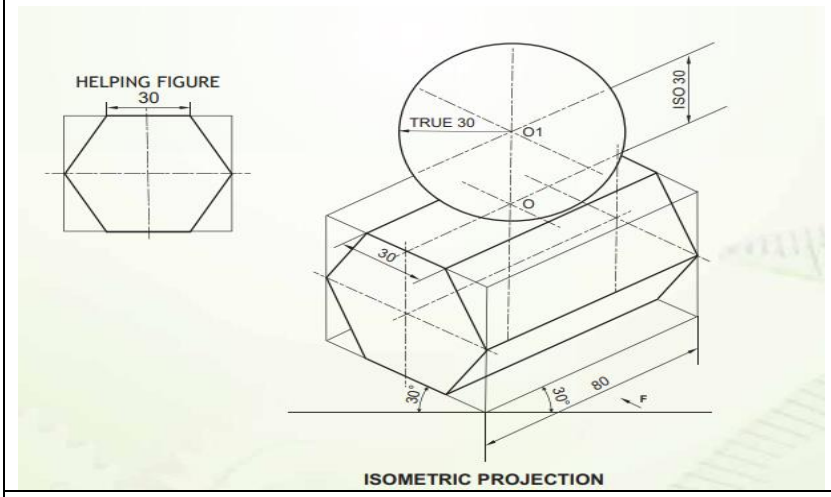
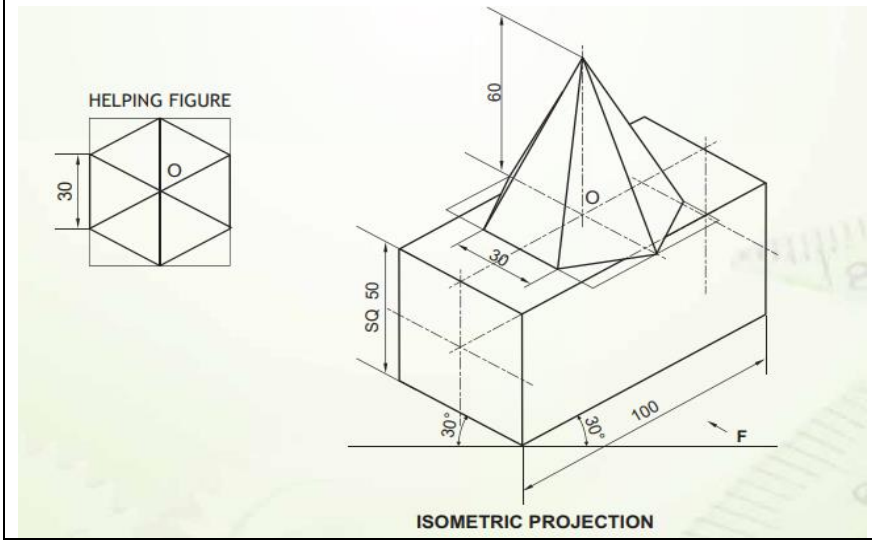

HELPING FIGURE
32
O
50
O
40
Ø76
F
30°
30°
ISOMETRIC PROJECTION

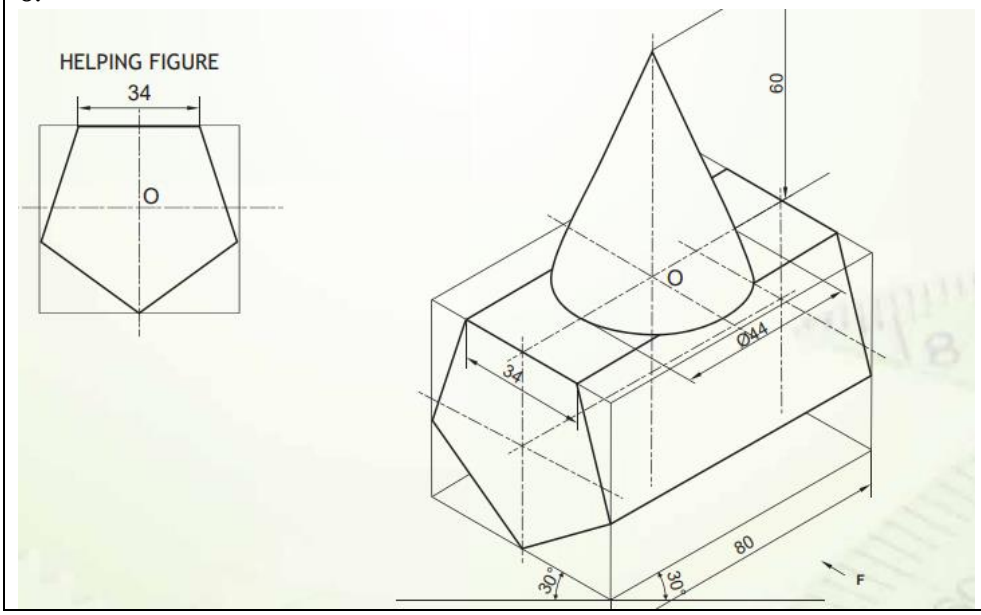
4.


HELPING FIGURE
30
TRUE 30
O1
ISO 30
O
30
30°
30°
80
F
ISOMETRIC PROJECTION

5.


HELPING FIGURE
30
O
60
O
30
SQ 50
30°
30°
100
F
ISOMETRIC PROJECTION

6.



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