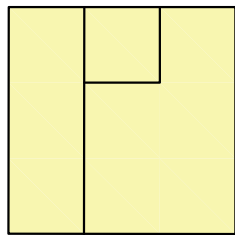
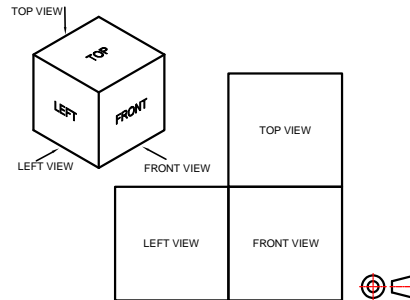
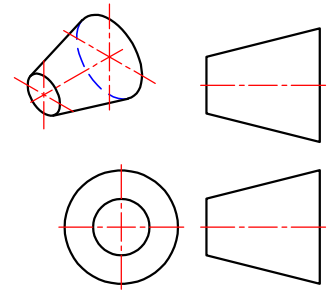


# ORTHOGRAPHIC DRAWING

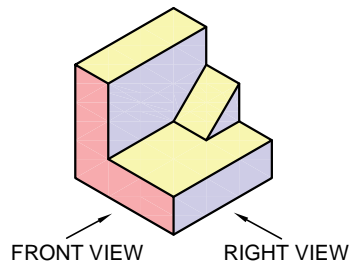
## 3rd ANGLE

### WORKSHEETS - MECHANICAL CASTINGS

FOR ALL GRADES

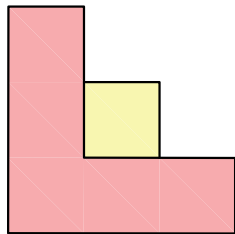


TOP VIEW

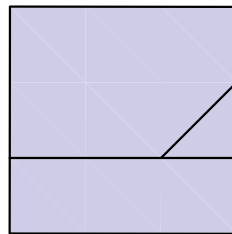


FRONT VIEW

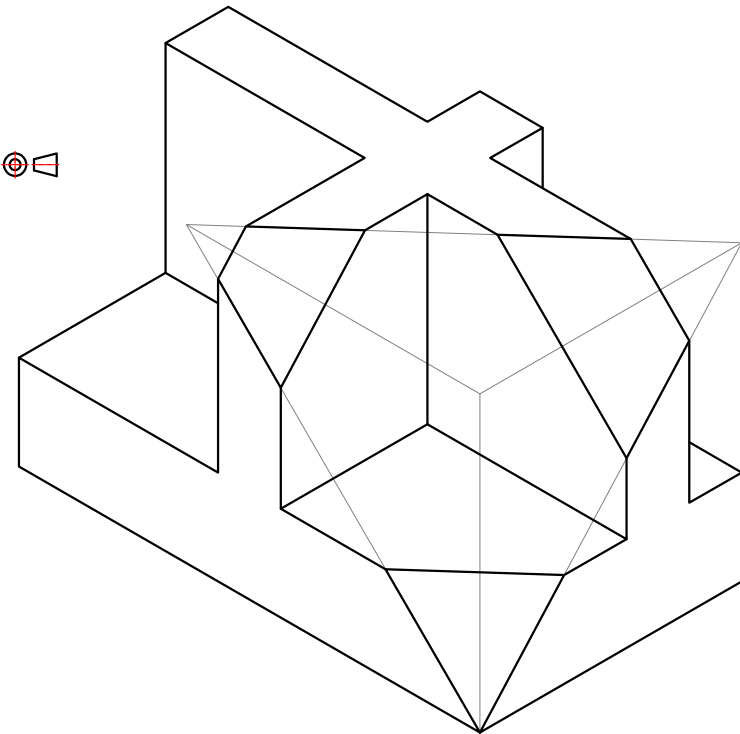
RIGHT VIEW



FRONT VIEW



RIGHT VIEW



MR V. GOUNDEN



**EXERCISE 1**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block.

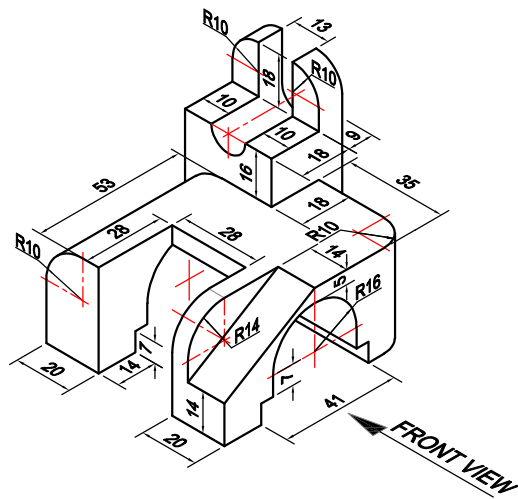
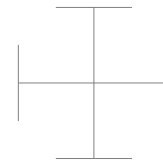
Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The left view

Show all hidden detail and centre line.

Label the views

Draw the symbol of projection



**3RD ANGLE ORTHOGRAPHIC PROJECTION**

**SCALE**  
1:1



NAME

DATE

GRADE / DIV.

**01**

**EXERCISE 2**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block.

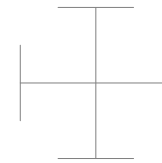
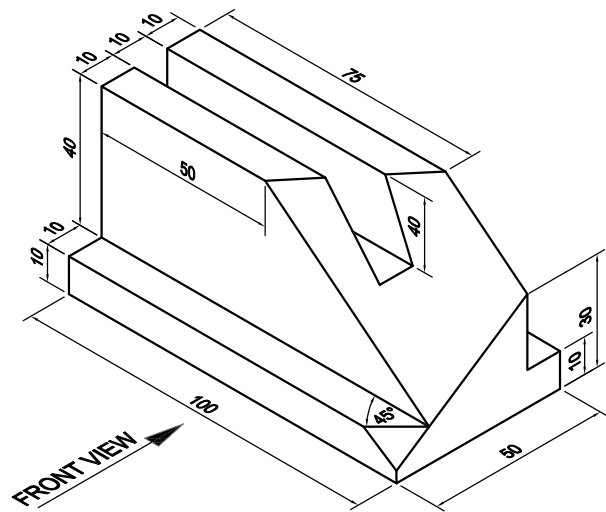
Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

Show all hidden detail and centre line.

Label the views

Draw the symbol of projection



**3RD ANGLE ORTHOGRAPHIC PROJECTION**

**SCALE**  
1:1



NAME

DATE

GRADE / DIV.

**02**

**EXERCISE 3**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block.

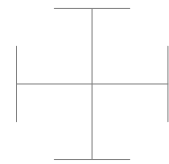
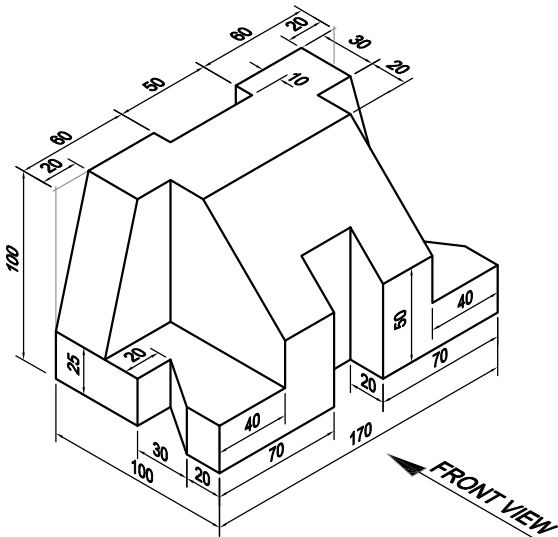
Using the information given, and scale 1:2, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The left view

Show all hidden detail and centre line.

Label the views

Draw the symbol of projection



**3RD ANGLE ORTHOGRAPHIC PROJECTION**

**SCALE**  
1:2



NAME

DATE

GRADE / DIV.

**03**

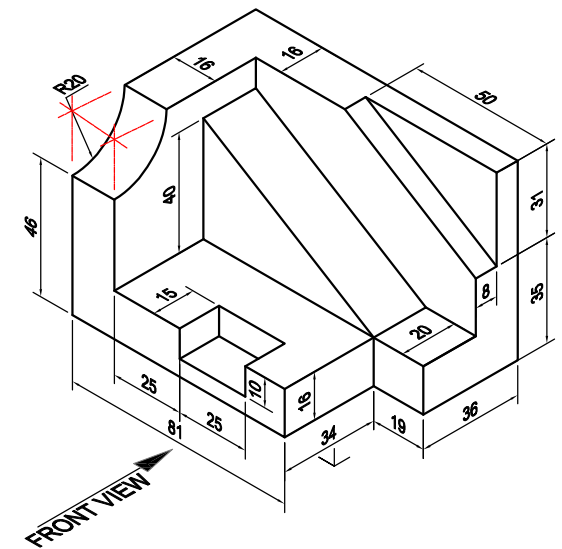
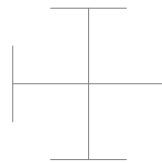
**EXERCISE 4**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block.  
Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

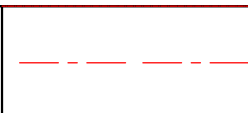
- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



3RD ANGLE ORTHOGRAPHIC PROJECTION

SCALE  
1:1



NAME

DATE

GRADE / DIV.

04

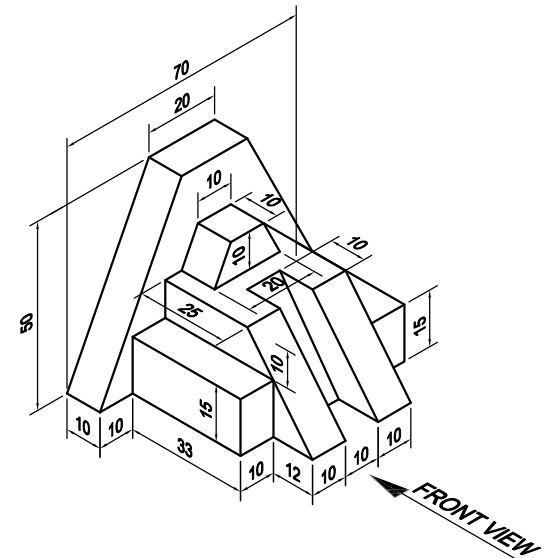
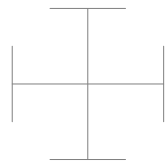
**EXERCISE 5**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block.  
Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The left view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



**3RD ANGLE ORTHOGRAPHIC PROJECTION**

**SCALE**  
1:1

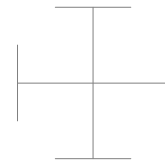
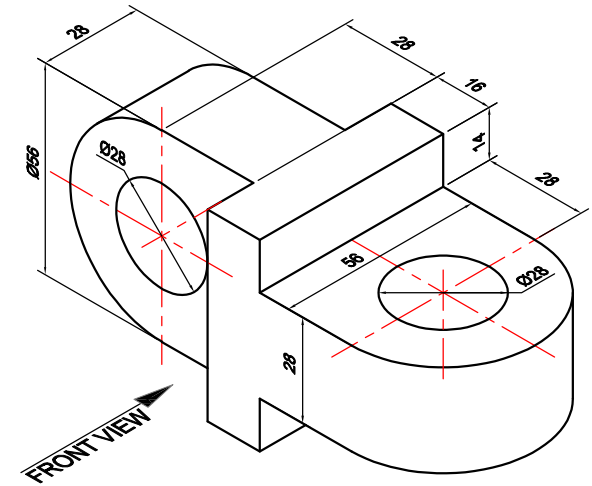


NAME

DATE

GRADE / DIV.

**05**



### EXERCISE 6

#### QUESTION

Given above is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

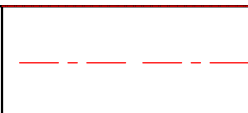
- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



3RD ANGLE ORTHOGRAPHIC PROJECTION

SCALE  
1:1



NAME

DATE

GRADE / DIV.

06

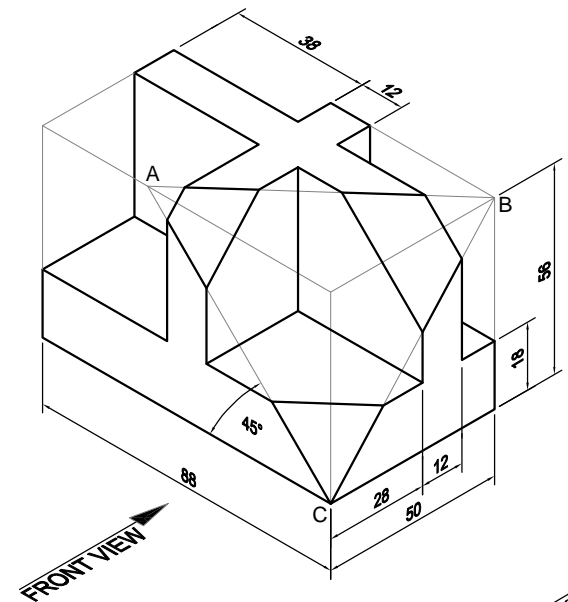
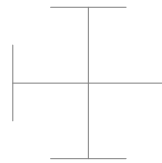
**EXERCISE 7**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



3RD ANGLE ORTHOGRAPHIC PROJECTION

SCALE  
1:1



NAME

DATE

GRADE / DIV.

07



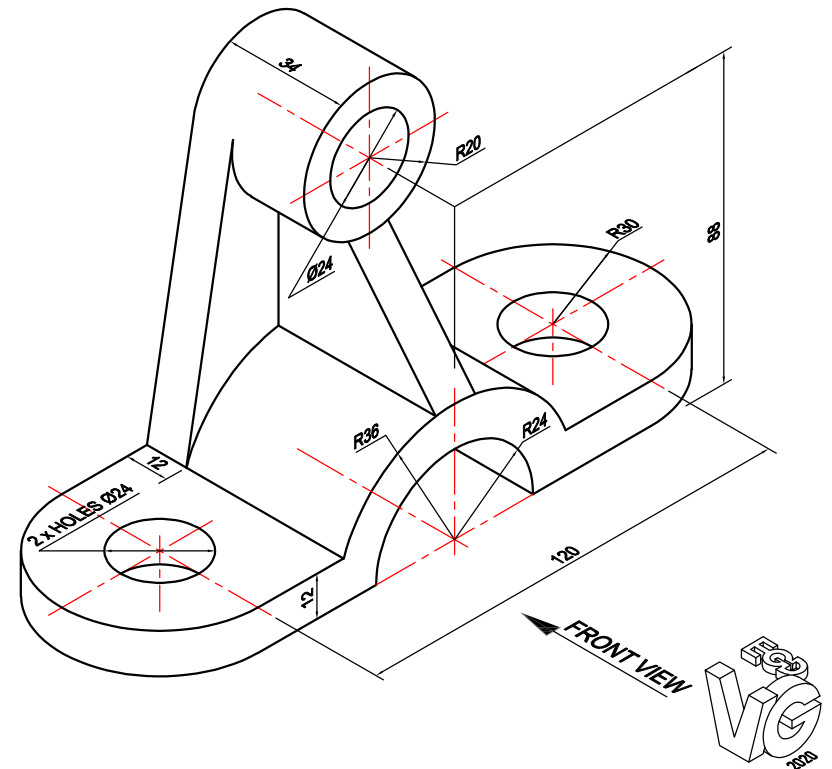
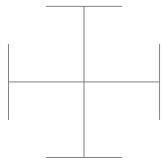
**EXERCISE 8**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:2, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The left view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



**3RD ANGLE ORTHOGRAPHIC PROJECTION**

**SCALE**  
1:2



NAME

DATE

GRADE / DIV.

**08**



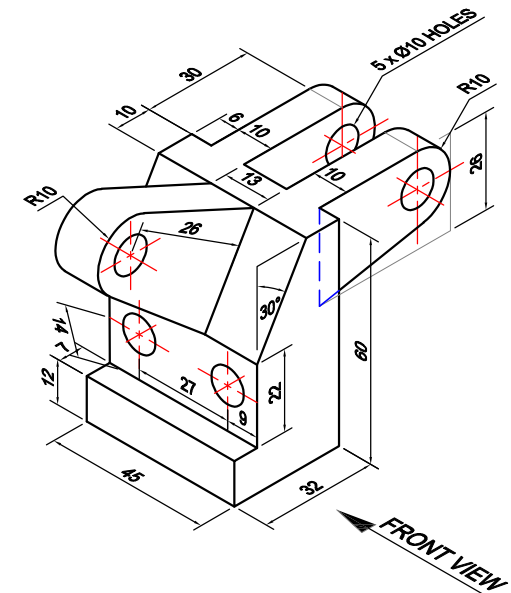
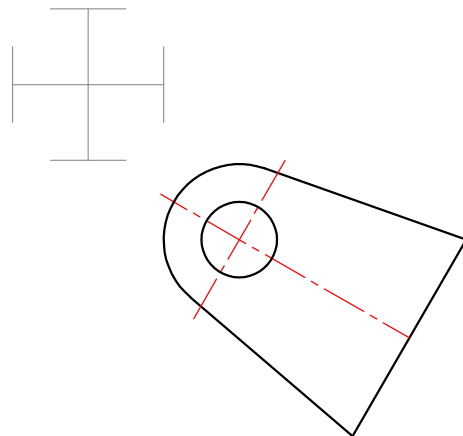
**EXERCISE 10**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The left view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



**3RD ANGLE ORTHOGRAPHIC PROJECTION**

**SCALE**  
1:1



NAME

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GRADE / DIV.

**10**

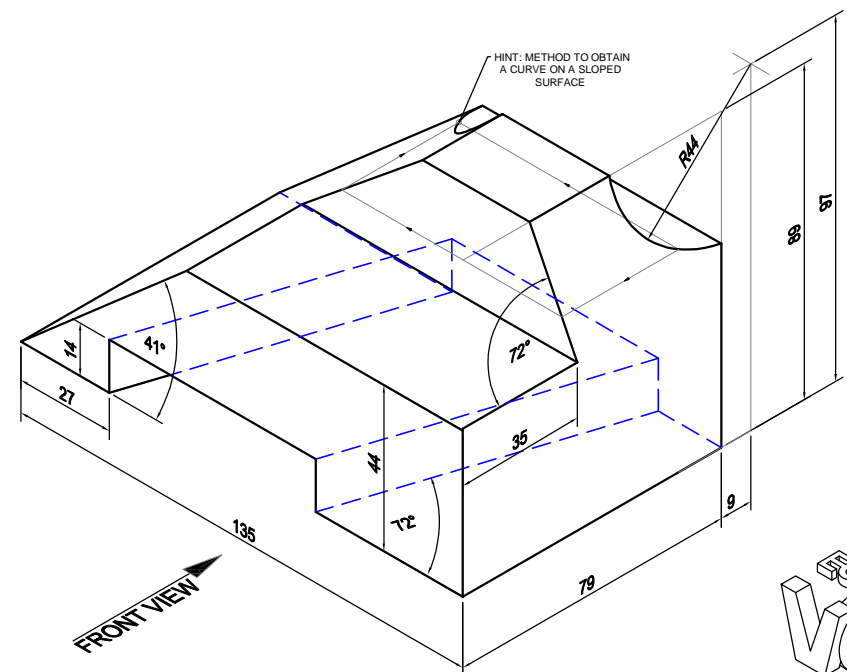
**EXERCISE 11**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:2, draw the following views in 3rd angle orthographic projection:

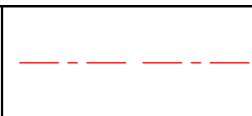
- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



3RD ANGLE ORTHOGRAPHIC PROJECTION

SCALE  
1:2



NAME

DATE

GRADE / DIV.

11



**EXERCISE 2**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block.

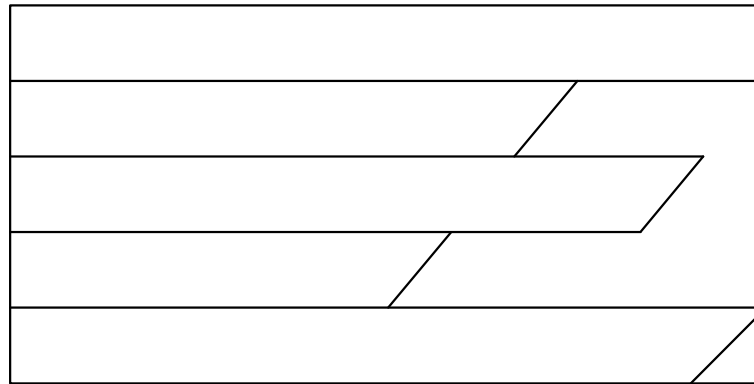
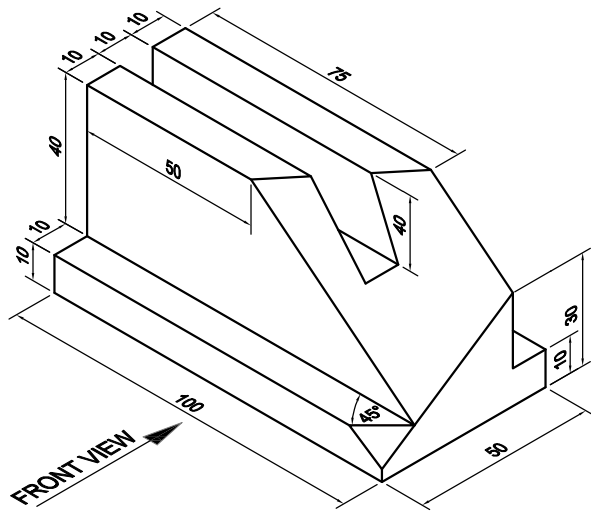
Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

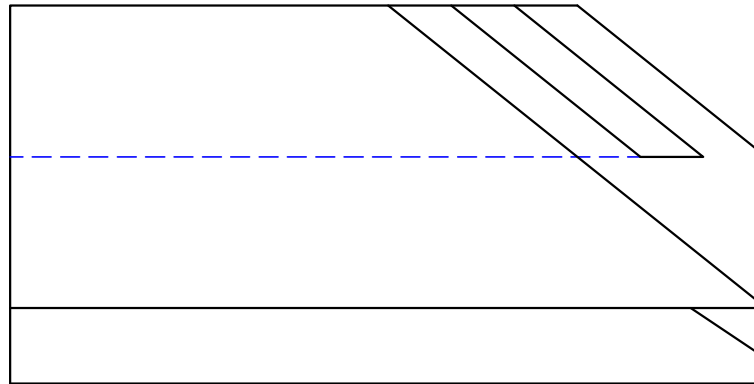
Show all hidden detail and centre line.

Label the views

Draw the symbol of projection



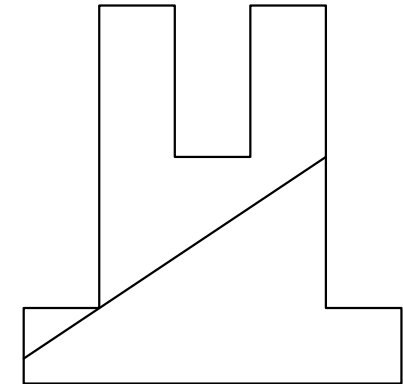
TOP VIEW



FRONT VIEW

X<sub>1</sub>

Y<sub>1</sub>

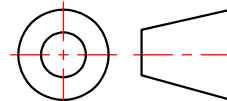


RIGHT VIEW



3RD ANGLE ORTHOGRAPHIC PROJECTION

SCALE  
1:1



NAME

DATE

GRADE / DIV.

02

**EXERCISE 3**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block.

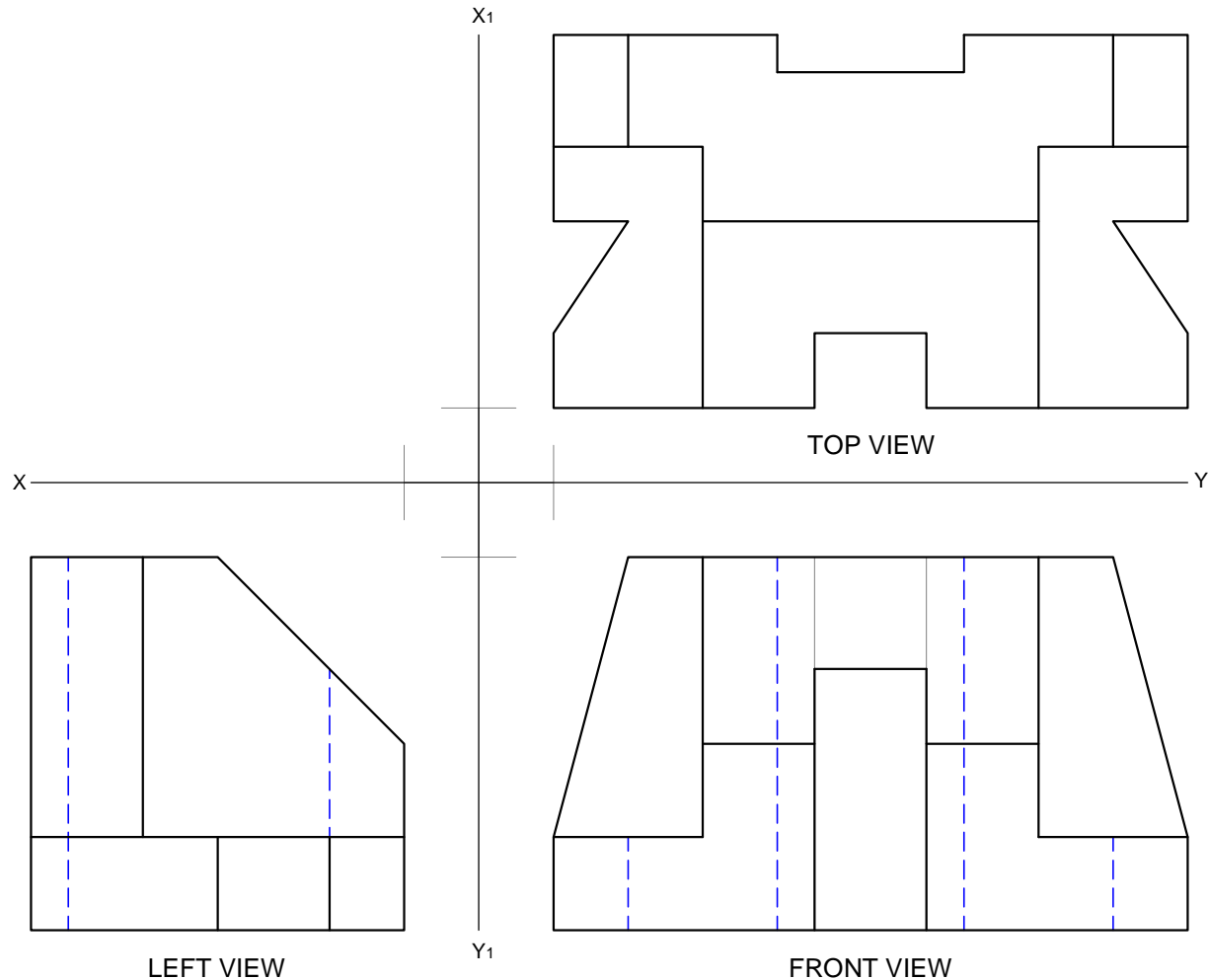
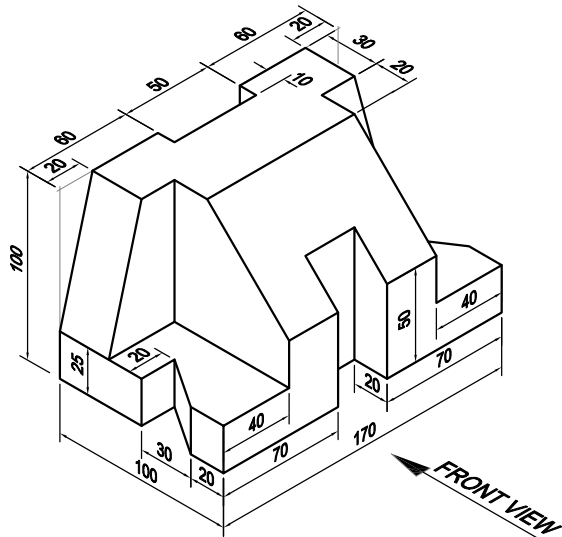
Using the information given, and scale 1:2, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The left view

Show all hidden detail and centre line.

Label the views

Draw the symbol of projection



TOP VIEW

LEFT VIEW

FRONT VIEW



<b>3RD ANGLE ORTHOGRAPHIC PROJECTION</b>	<b>SCALE</b> 1:2		NAME	DATE	<b>03</b>
			GRADE / DIV.		





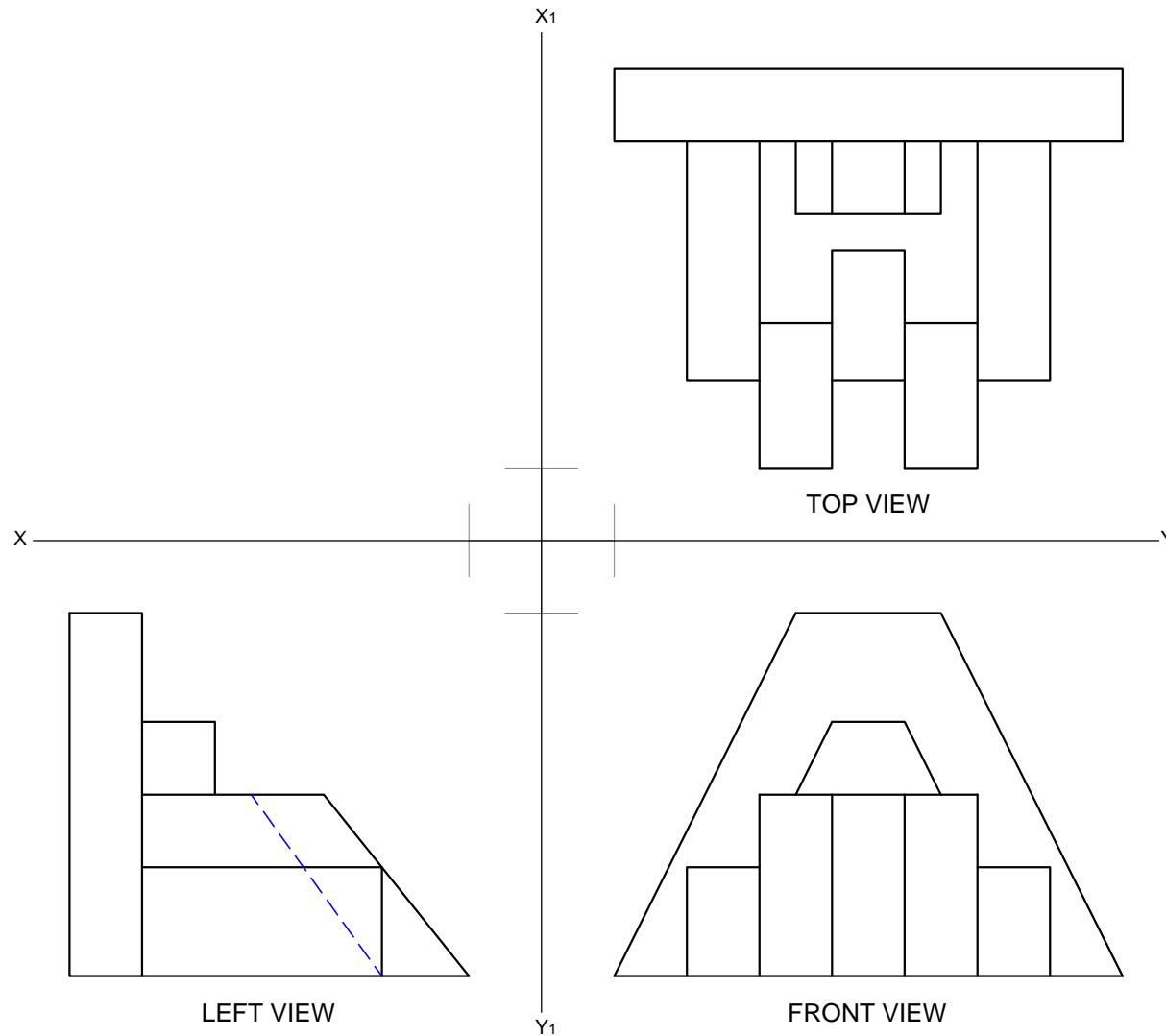
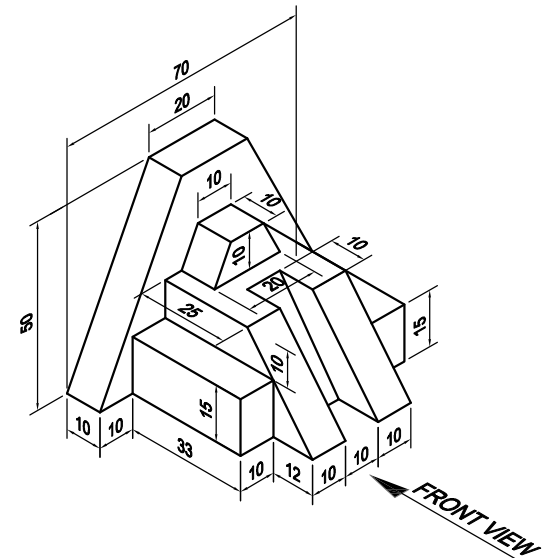
**EXERCISE 5**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

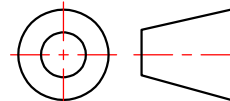
- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The left view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



**3RD ANGLE ORTHOGRAPHIC PROJECTION**

**SCALE**  
1:1

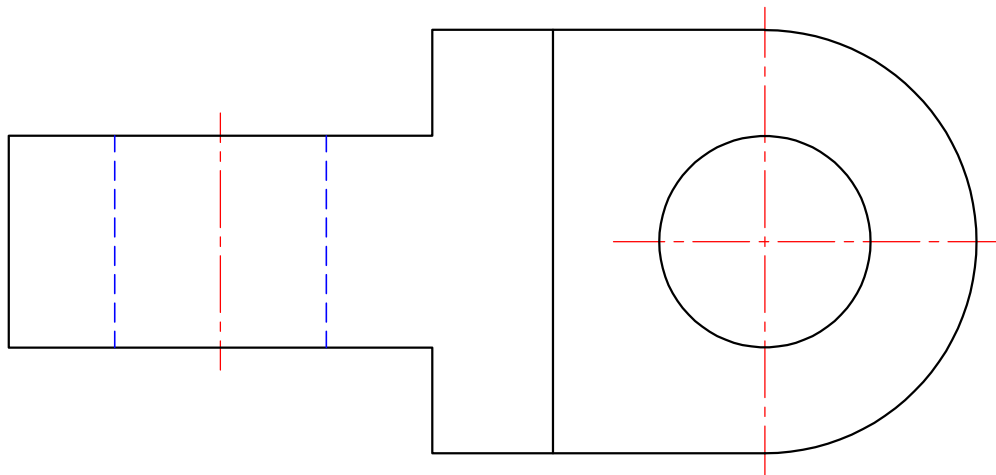


NAME

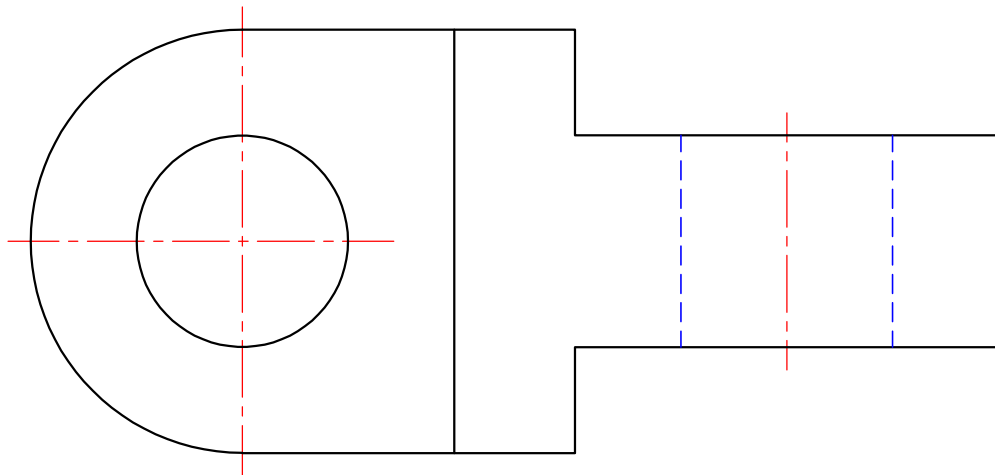
DATE

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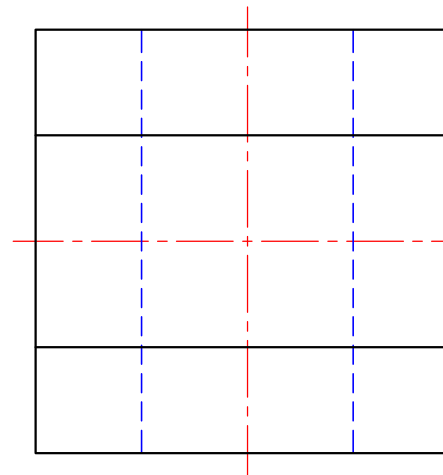
**05**



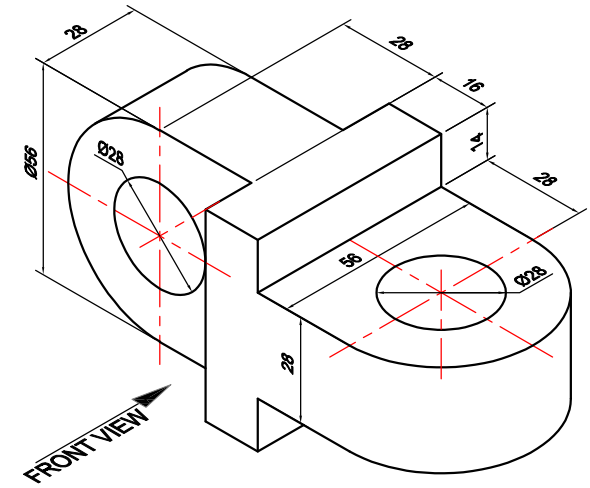
TOP VIEW



FRONT VIEW



RIGHT VIEW



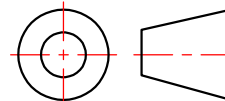
**EXERCISE 6**

**QUESTION**

Given above is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection

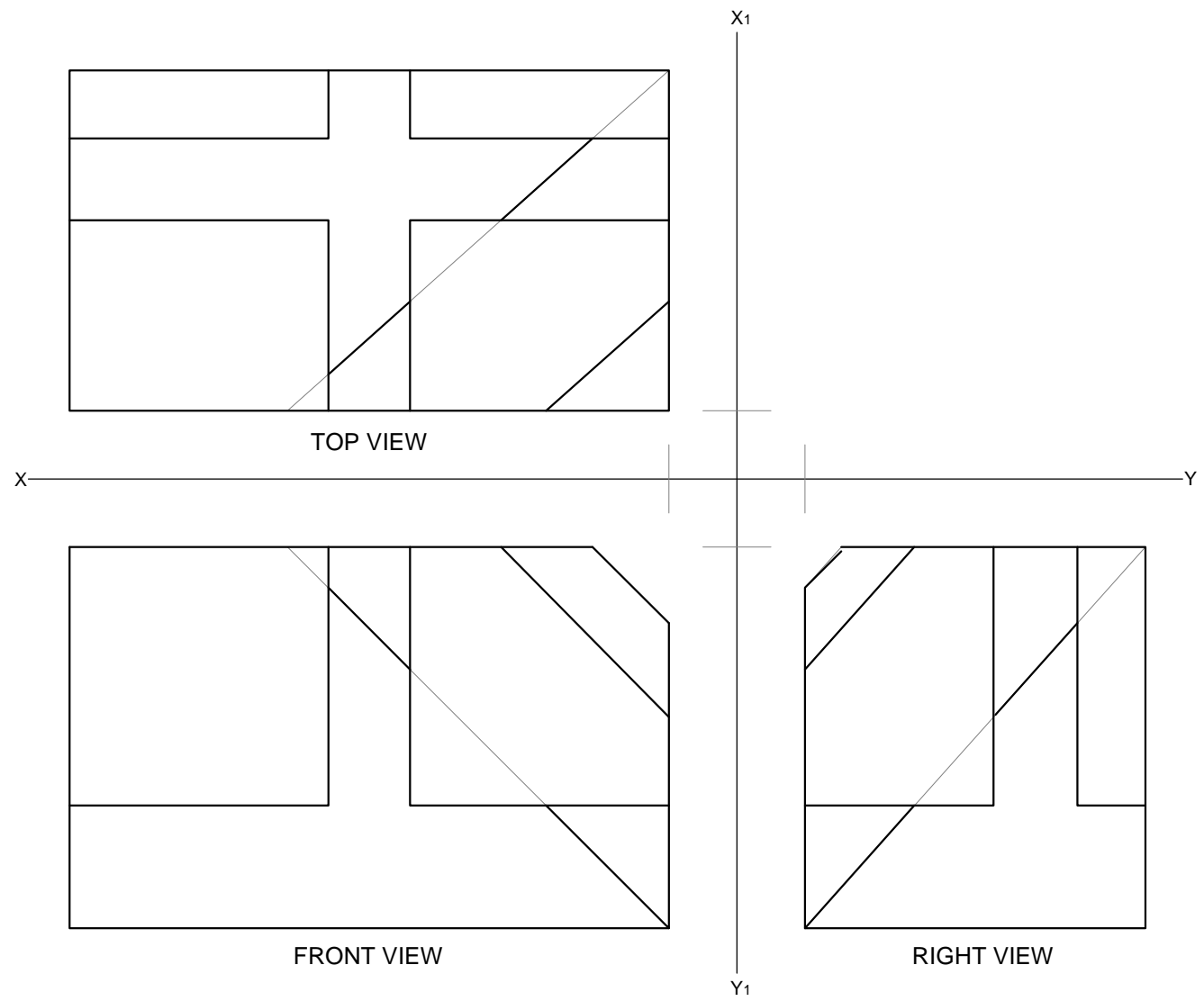
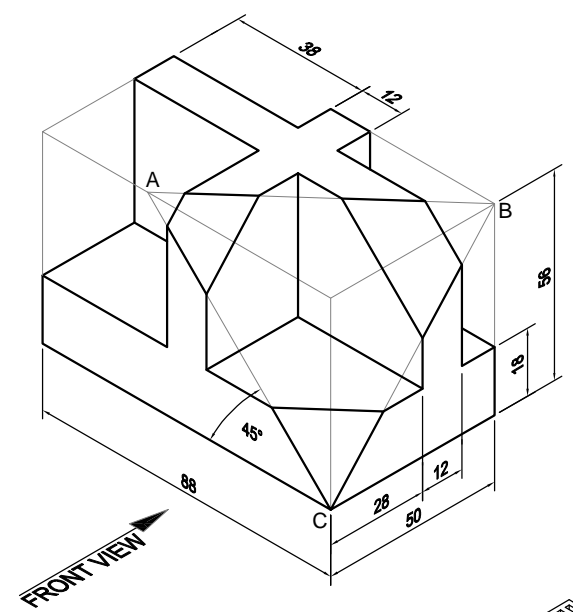


**EXERCISE 7**  
**QUESTION**

Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



<b>3RD ANGLE ORTHOGRAPHIC PROJECTION</b>	<b>SCALE</b> 1:1		NAME	DATE	<b>07</b>
			GRADE / DIV.		

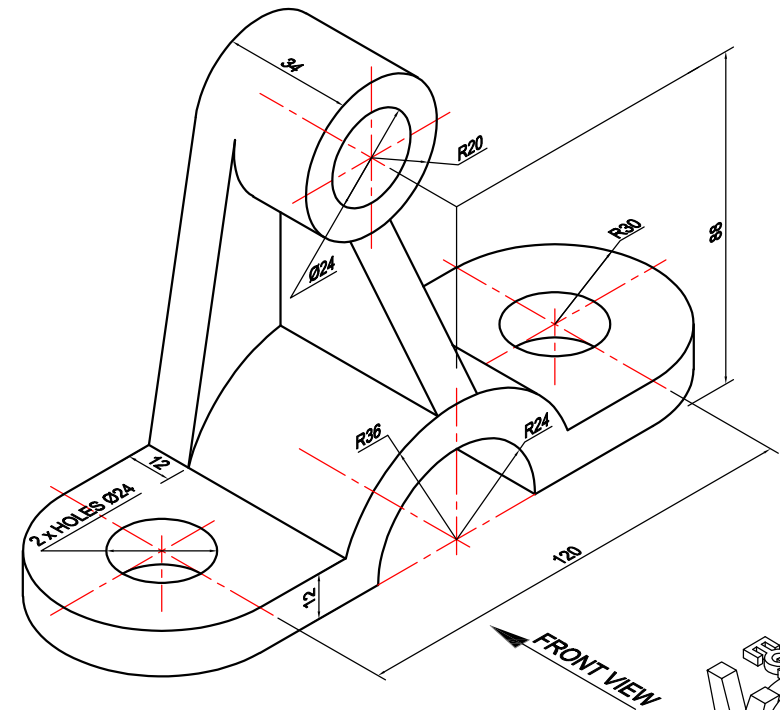
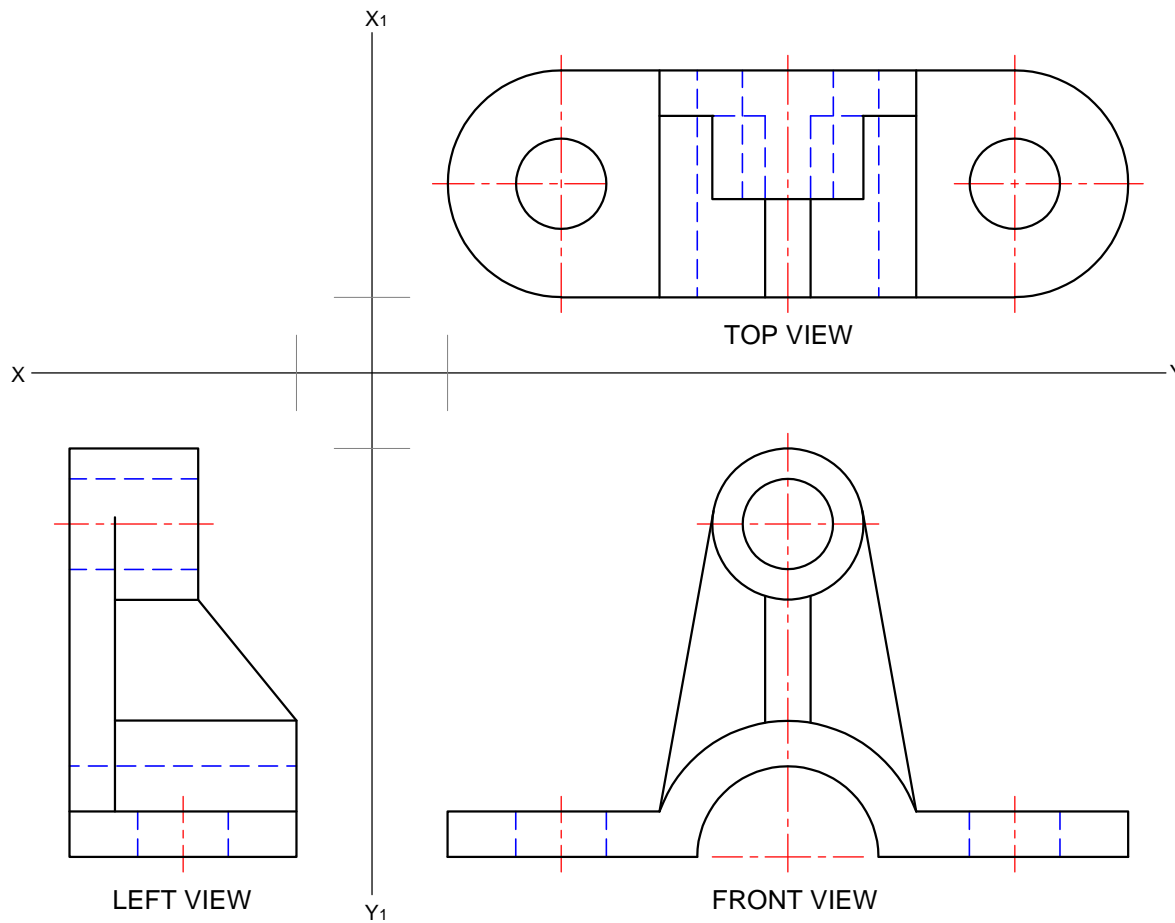
**EXERCISE 8**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:2, draw the following views in 3rd angle orthographic projection:

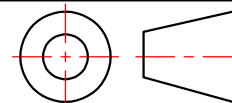
- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The left view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



3RD ANGLE ORTHOGRAPHIC PROJECTION

SCALE  
1:2



NAME

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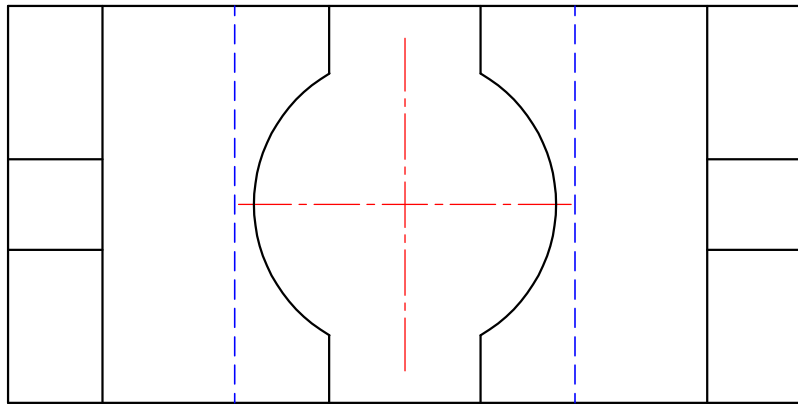
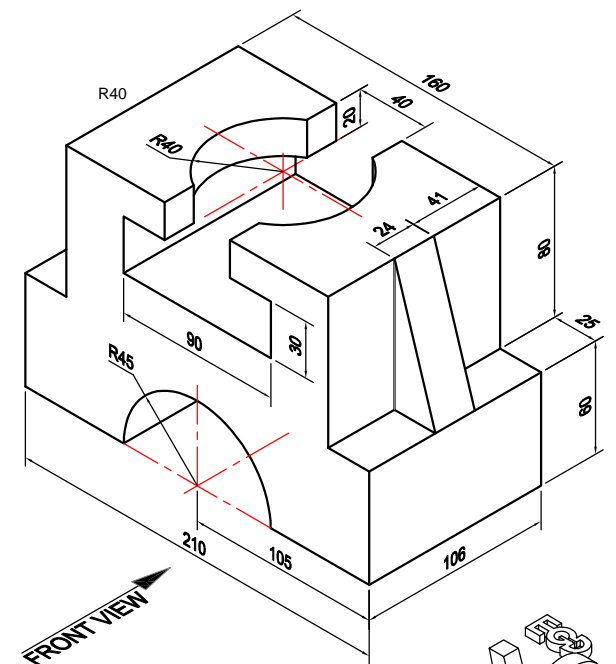
**EXERCISE 9**

**QUESTION**

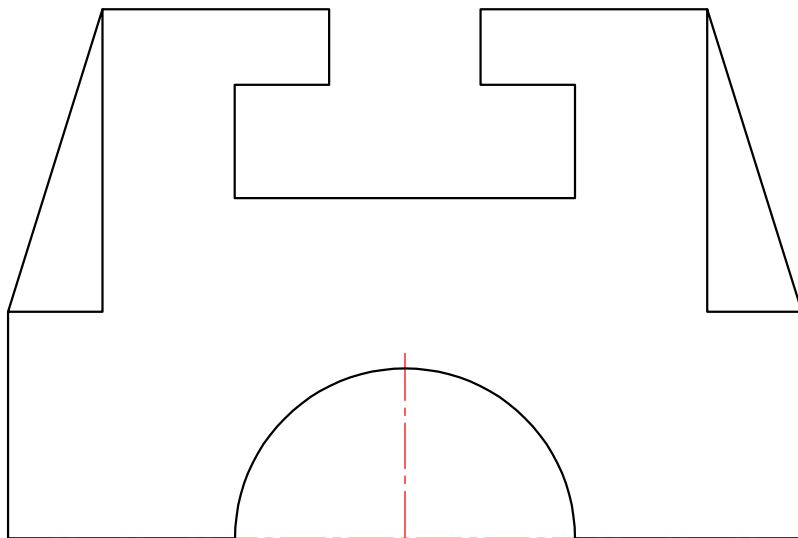
Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:2, draw the following views in 3rd angle orthographic projection:

- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

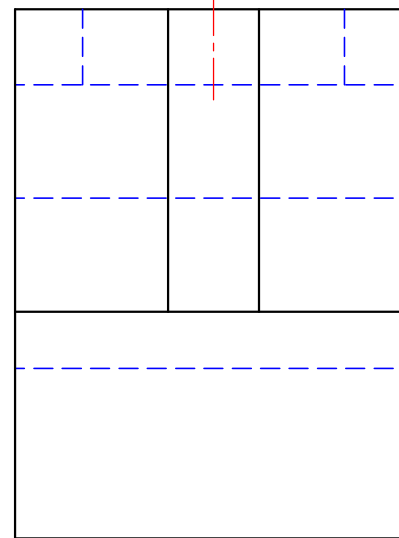
Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



TOP VIEW



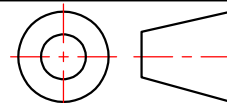
FRONT VIEW



RIGHT VIEW

3RD ANGLE ORTHOGRAPHIC PROJECTION

SCALE  
1:2



NAME

DATE

GRADE / DIV.

09

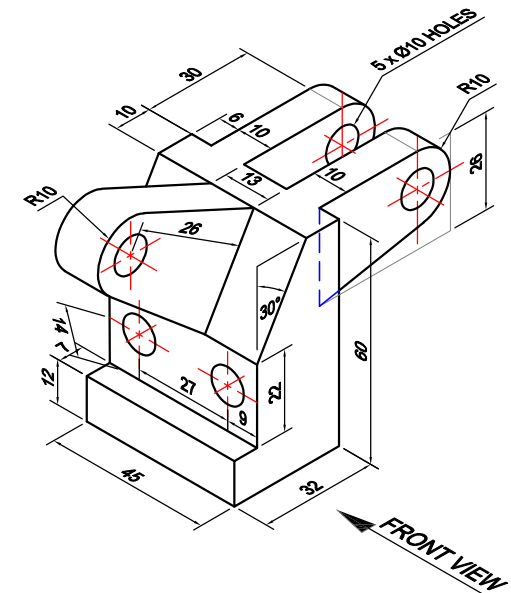
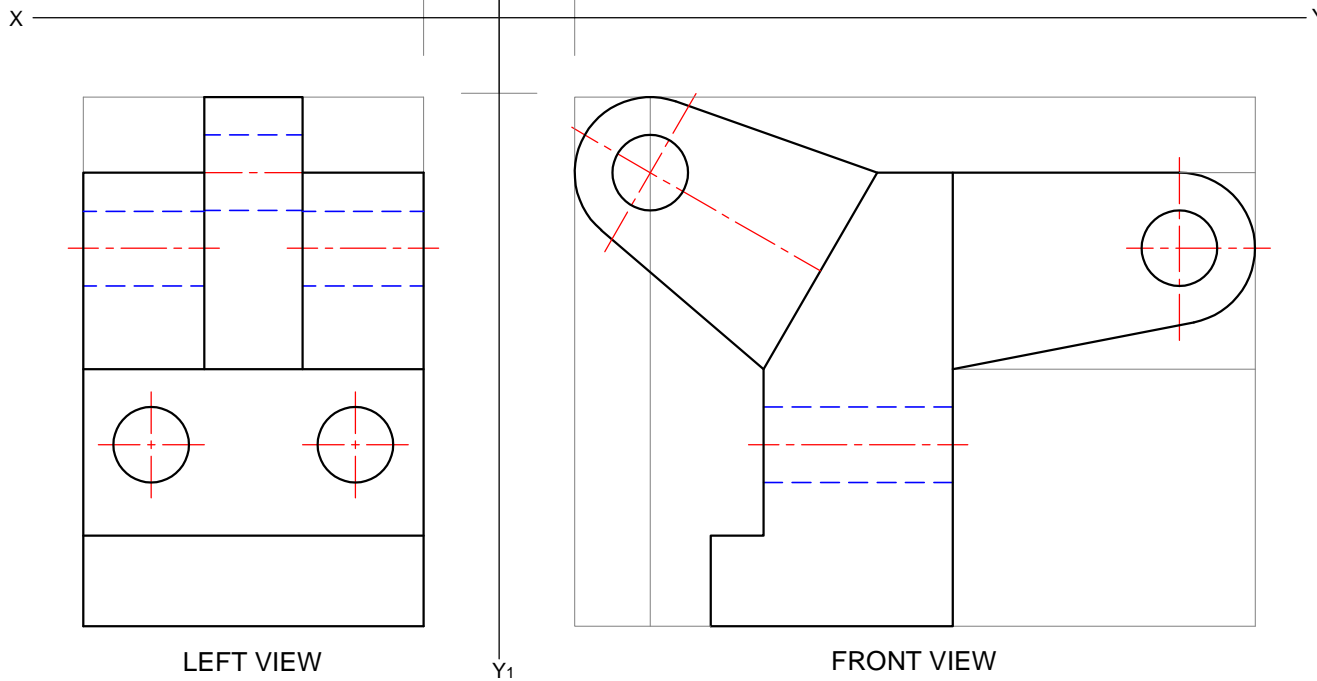
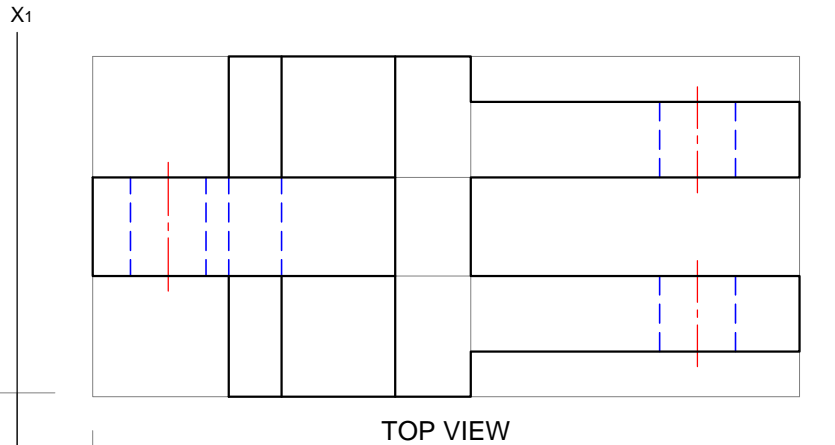
**EXERCISE 10**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:1, draw the following views in 3rd angle orthographic projection:

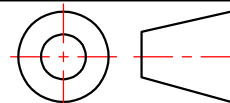
- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The left view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



**3RD ANGLE ORTHOGRAPHIC PROJECTION**

**SCALE**  
1:1



NAME

DATE

GRADE / DIV.

**10**

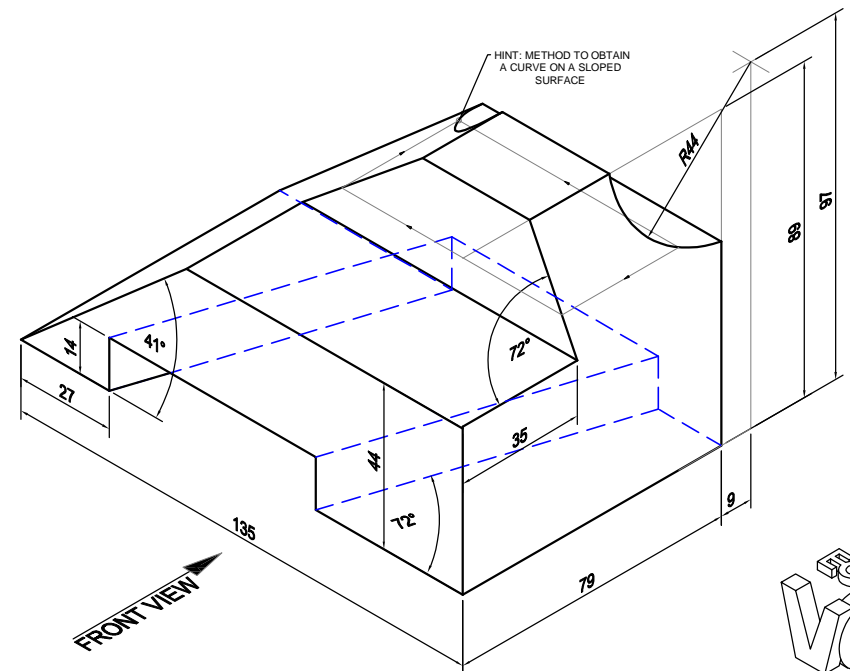
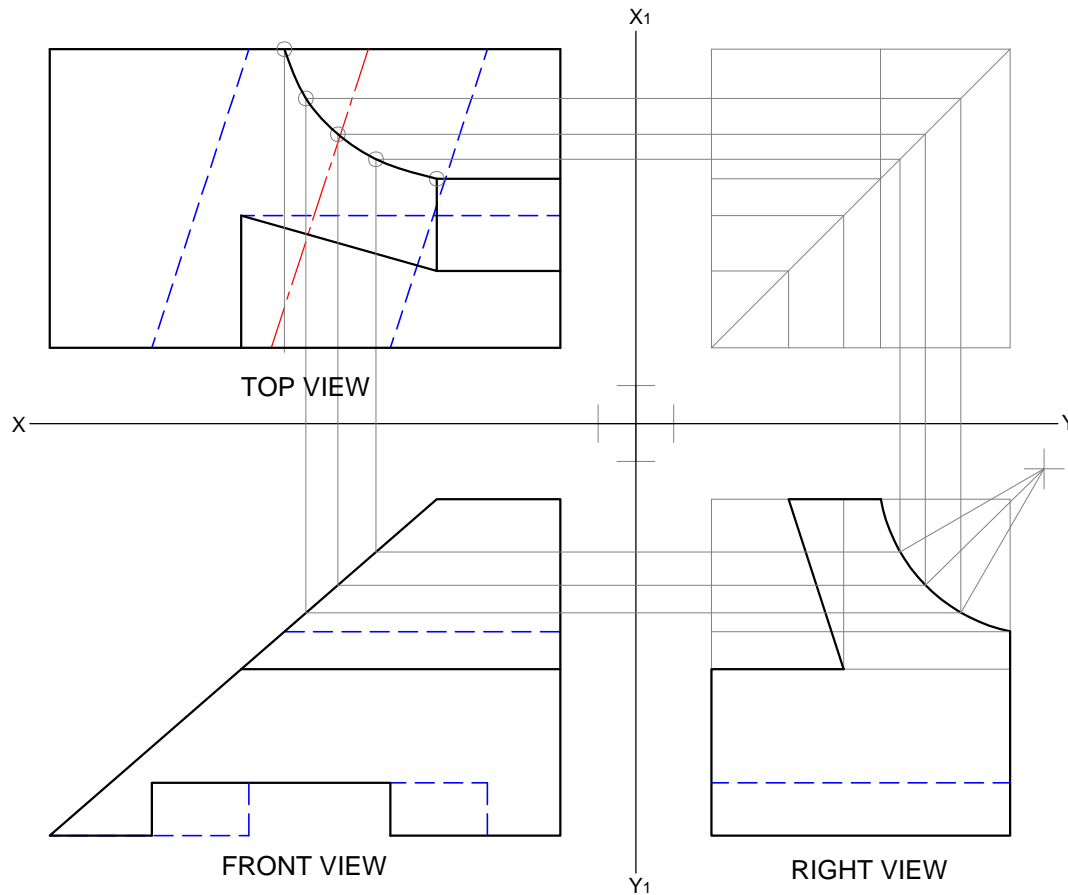
**EXERCISE 11**

**QUESTION**

Given below is an isometric view with dimensions of a shaped block. Using the information given, and scale 1:2, draw the following views in 3rd angle orthographic projection:

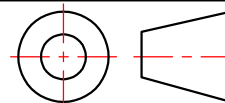
- 1.1 The front view (as shown by the arrow)
- 1.2 The top view
- 1.3 The right view

Show all hidden detail and centre line.  
Label the views  
Draw the symbol of projection



3RD ANGLE ORTHOGRAPHIC PROJECTION

SCALE  
1:2



NAME

DATE

GRADE / DIV.

11



<b>GRADE</b>	10	<b>SUBJECT</b>	E.G.D	<b>WEEK</b>	1 of Term 2	<b>TOPIC</b>	Mechanical Drawings (Lesson 1 of 3)
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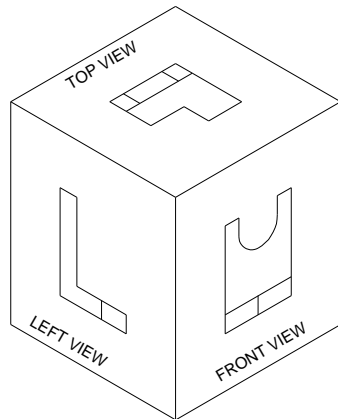
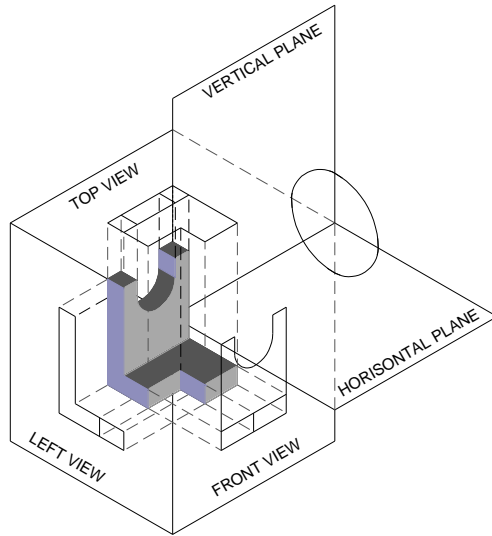
<b>LESSON SUMMARY FOR: DATE STARTED:</b>		<b>DATE COMPLETED:</b>	
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<b>LESSON OBJECTIVES</b>	<p><b>Orthographic Projection: Third Angle Orthographic projection</b></p> <p><i>At the end of this lesson the learner must have a clear understanding of Third-Angle Orthographic projection.</i></p>
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TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED												
<p><b><u>Introduction: Pre-knowledge</u></b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Line type:</th> <th>DISCRIPTION OF LINE:</th> <th>USED FOR:</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">Thin, dark and continuous</td> <td style="text-align: center;">Out lines.....</td> </tr> <tr> <td style="text-align: center;">B</td> <td style="text-align: center;">Thin, lighter and continuous</td> <td style="text-align: center;">Writing.....</td> </tr> <tr> <td style="text-align: center;">C</td> <td style="text-align: center;">Thin, very light and continuous</td> <td style="text-align: center;">Constructions...</td> </tr> </tbody> </table> <p><i>For hatching a B-type line (medium line) will be used.</i></p>	Line type:	DISCRIPTION OF LINE:	USED FOR:	A	Thin, dark and continuous	Out lines.....	B	Thin, lighter and continuous	Writing.....	C	Thin, very light and continuous	Constructions...	<p>Complete the given worksheet as homework</p>	<p>45 min (1 lesson)</p>	<ul style="list-style-type: none"> <li>- Text book.</li> <li>- Chalk board/ White Board.</li> <li>- Models (If possible)</li> <li>-This work can also be prepared before hand on a transparency.</li> </ul> <p style="text-align: right;"><i>The following</i></p>
Line type:	DISCRIPTION OF LINE:	USED FOR:													
A	Thin, dark and continuous	Out lines.....													
B	Thin, lighter and continuous	Writing.....													
C	Thin, very light and continuous	Constructions...													



**Main Body (Lesson presentation): Explain the following to the learners**

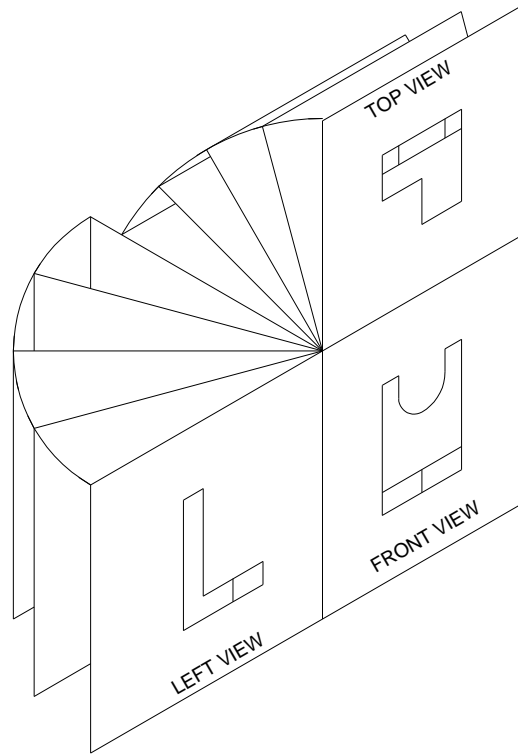


*textbooks have good references on this specific topic:*

1.Modern Engineering Graphics and Design - Zachen.

2.Engineering Graphics and Design for the Senior Secondary phase - J.Engelbrecht

2.Engineering Graphics and Design J v L & D D

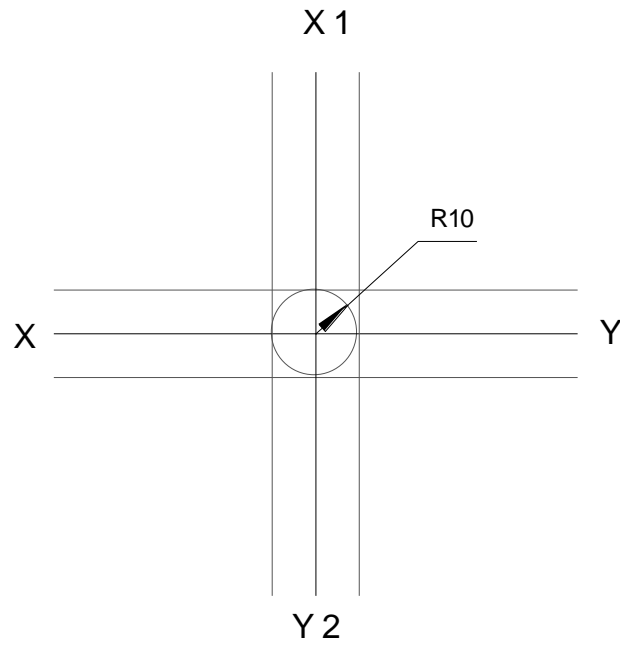


**In this illustration the Isometric drawing is changed into a third-angle orthographic drawing.**

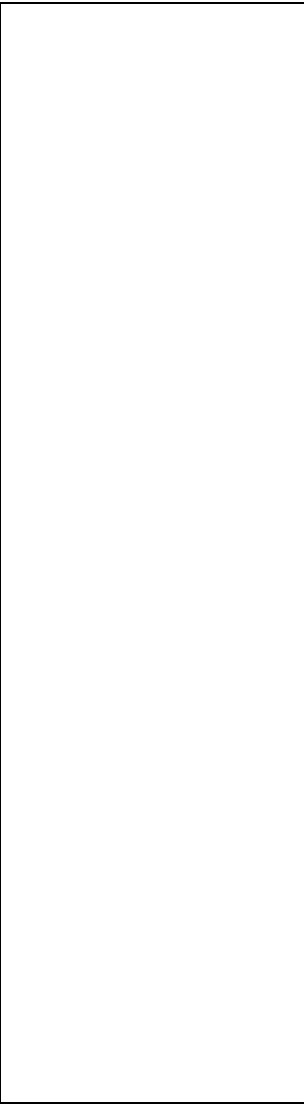
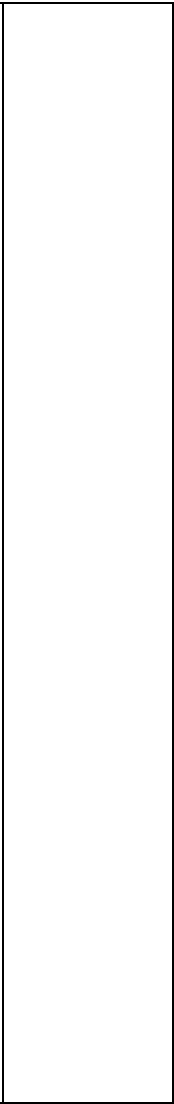
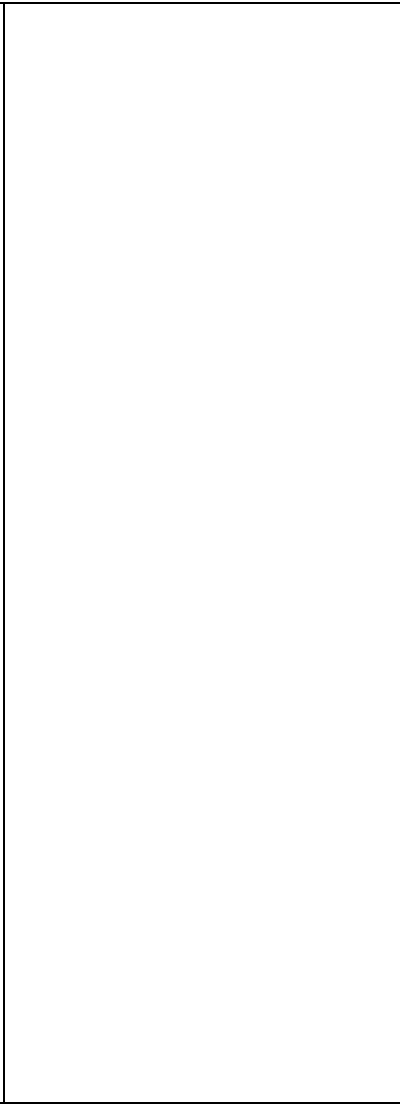
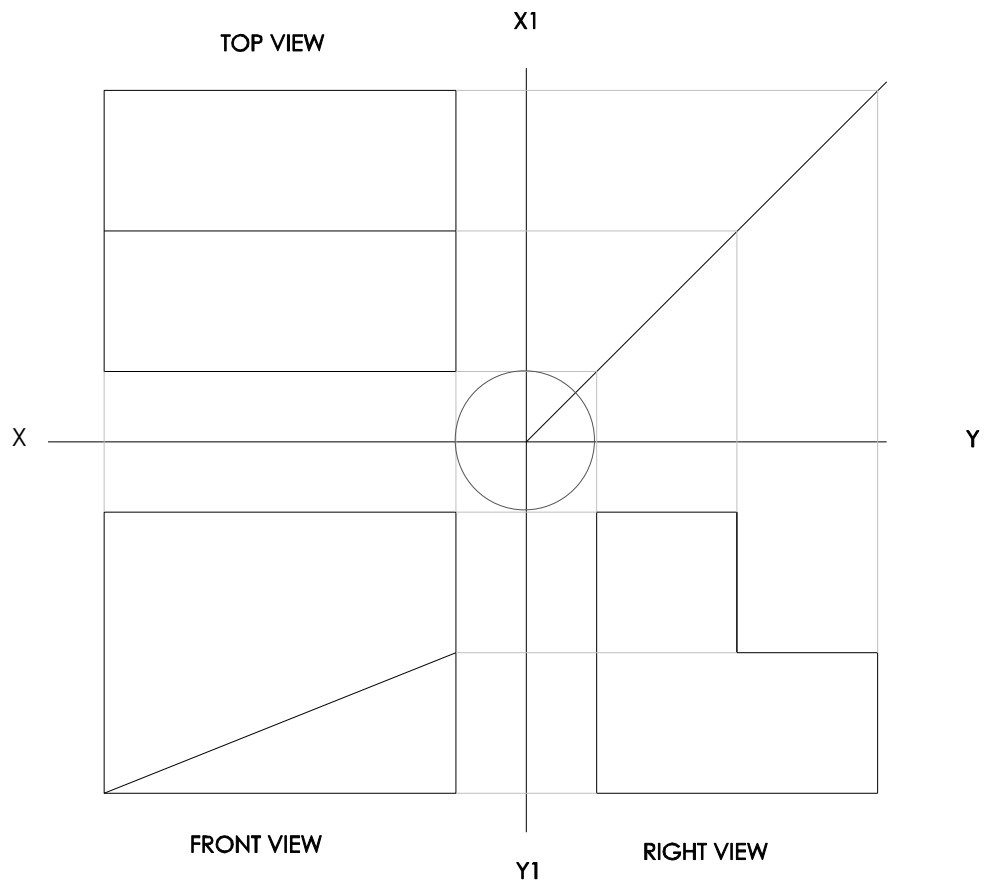
1. It is very important that the learners understand where the different views will be placed.
  - What you see from the left will be drawn on the left.
  - What you see from the right will be drawn on the right.
  - What you see from the top will be drawn at the top

2. Explain to the learners how to divide the page to ensure that there is enough space for each view.

- It is advisable to teach the learners to draw a 5/10mm guideline on each side of the division lines to help with the placement of the views.
- Teach the learners to project using the 45° line



**EXAMPLE:**



Name of Teacher \_\_\_\_\_

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

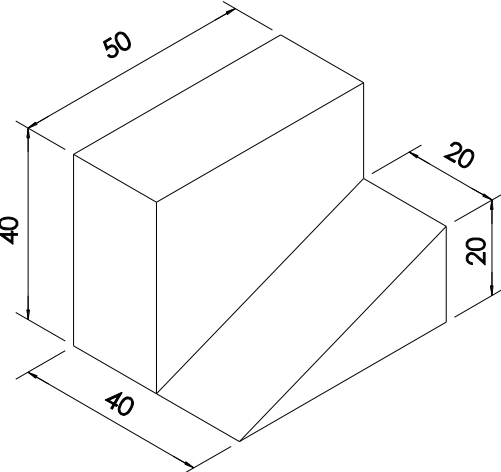
HOD: \_\_\_\_\_

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

Draw the front-, top and right view of the given Isometric drawing.

In Third Angle Orthographic Projection.



Answer:

