



L-Università
ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL
2026 MAIN SESSION**

SUBJECT: **Graphical Communication**

PAPER NUMBER: I - Level 1 - 2 - 3

DATE: 18th May 2026

TIME: 2 hours 5 mins

General note: Clear and legible handwritten answers in pen or pencil are accepted where long answers are required.

1. John is working on his school based assessment and he wants to focus his project on the hexagon. With the help of his teacher, he outlined the following details:

Area/theme title: Design a 3D shape made up of hexagons.

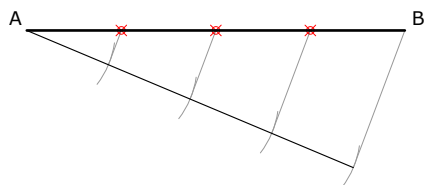
Related Lo's: By the end of this assignment, I will be able to:

- apply the division of a line method as part of harder solutions;
- construct a hexagon in a circle (A/C);
- apply three different colours to a pictorial drawing.

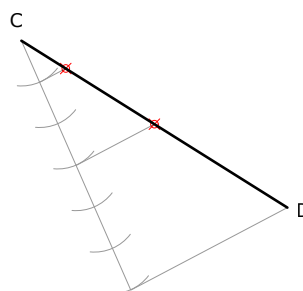
Success criteria: The final design should:

- include one or more hexagons;
- include a variety of geometrical constructions;
- include shading in colour using pencil colours.

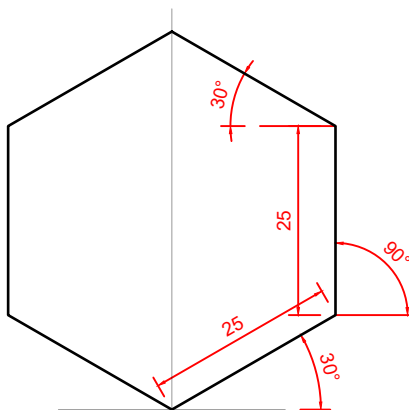
Research and examples:



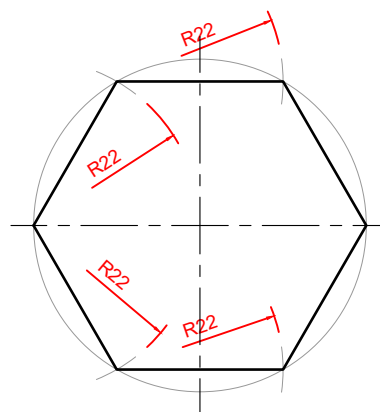
Division of a line AB into 4 equal parts



Division of an inclined line CD in the ratio of 1:2:3



Construction of a hexagon using the protractor



Construction of a hexagon inside a circle

a) Divide the horizontal line AB into 4 equal parts.

(2)



b) Indicate whether the following statements are true or false.

(2)

i. A line can be divided into any number of equal parts.

TRUE / FALSE

ii. A line can be bisected into 6 parts.

TRUE / FALSE

iii. A square has more lines of symmetry than a rectangle.

TRUE / FALSE

iv. The interior angle of a hexagon is 120° .

TRUE / FALSE

c) Construct the following regular hexagons given the data.

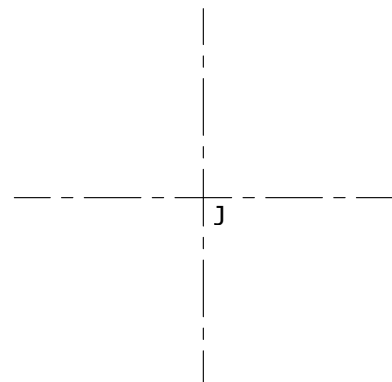
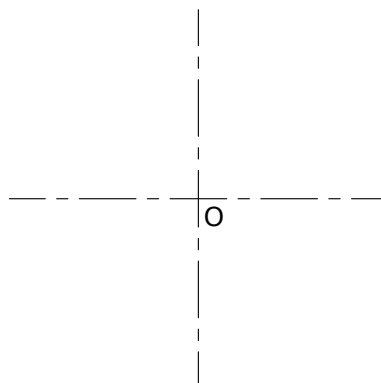
(3)

i. Hexagon using the protractor on base line GH.

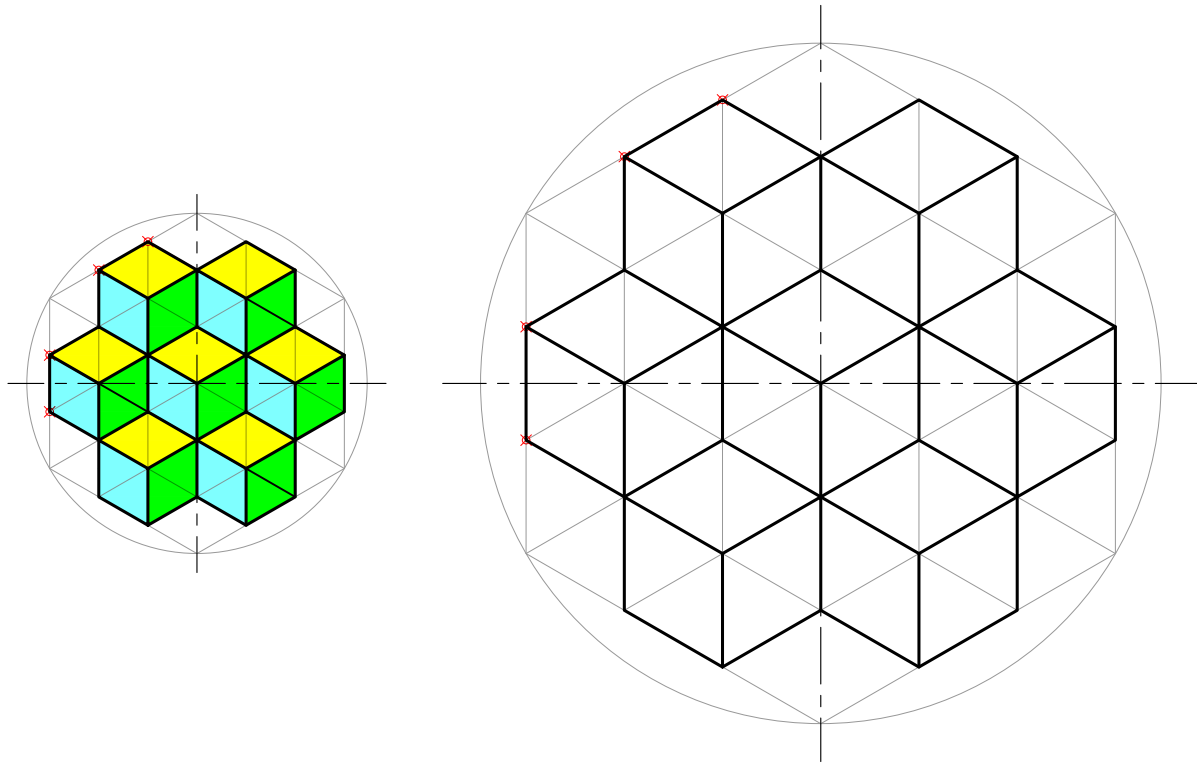
ii. Hexagon across corners (A/C) in circle with centre O.

iii. Hexagon across flats (A/F) around circle with centre J.

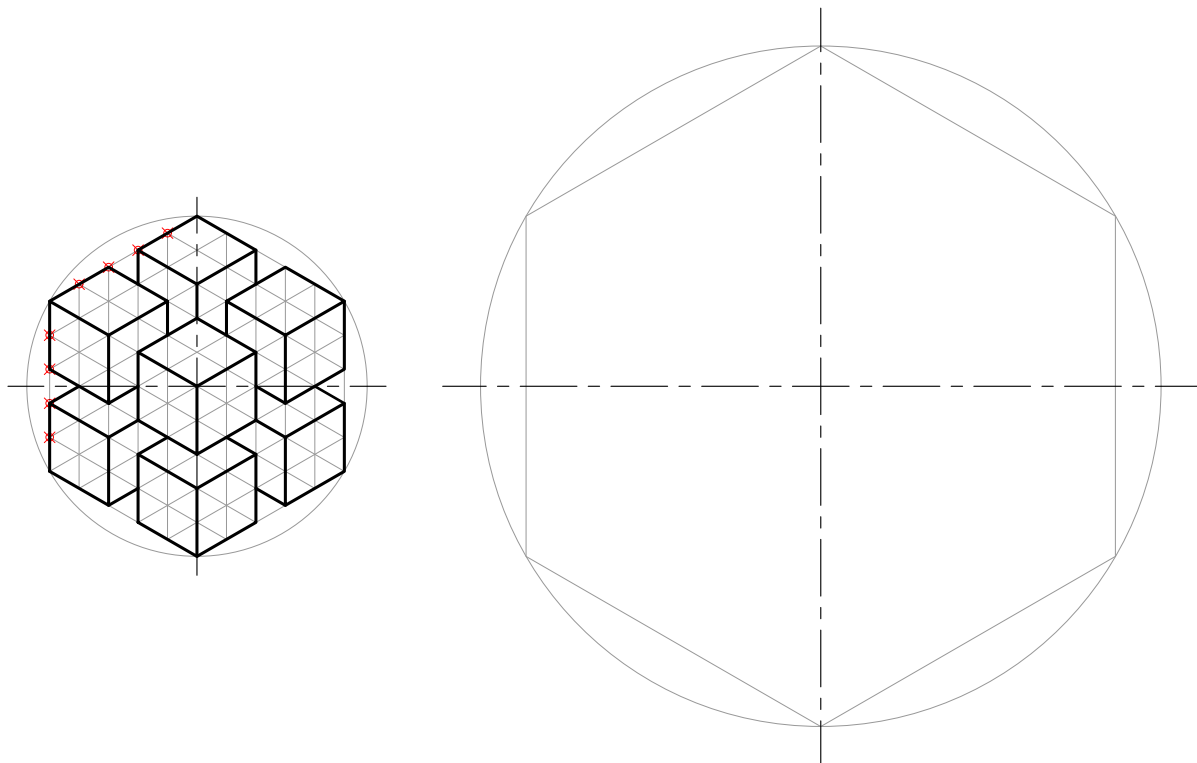
G ————— H



- d) After many sketches and drawings John realised that a hexagon can be tiled to give a 3D impression. His first design is given below. He obtained this design by dividing all the edges of the hexagon into three equal parts and projecting the lines parallel to the sides. Use **THREE** coloured pencils to shade the different faces and make the design look three dimensional. (3)



- e) For his second idea, John realised that he can divide the sides into five equal parts and obtain another 3D design as shown below. Recreate this design using the start lines below. (8)



- f) Draw a sketch of an original title block design that John could use for his project. (2)

Space for freehand sketch.

- g) When sketching the original title block, John kept in mind the formal elements and visual principles related to graphic design to guide him.

- i. Indicate **ONE** formal element that is included in part (f).

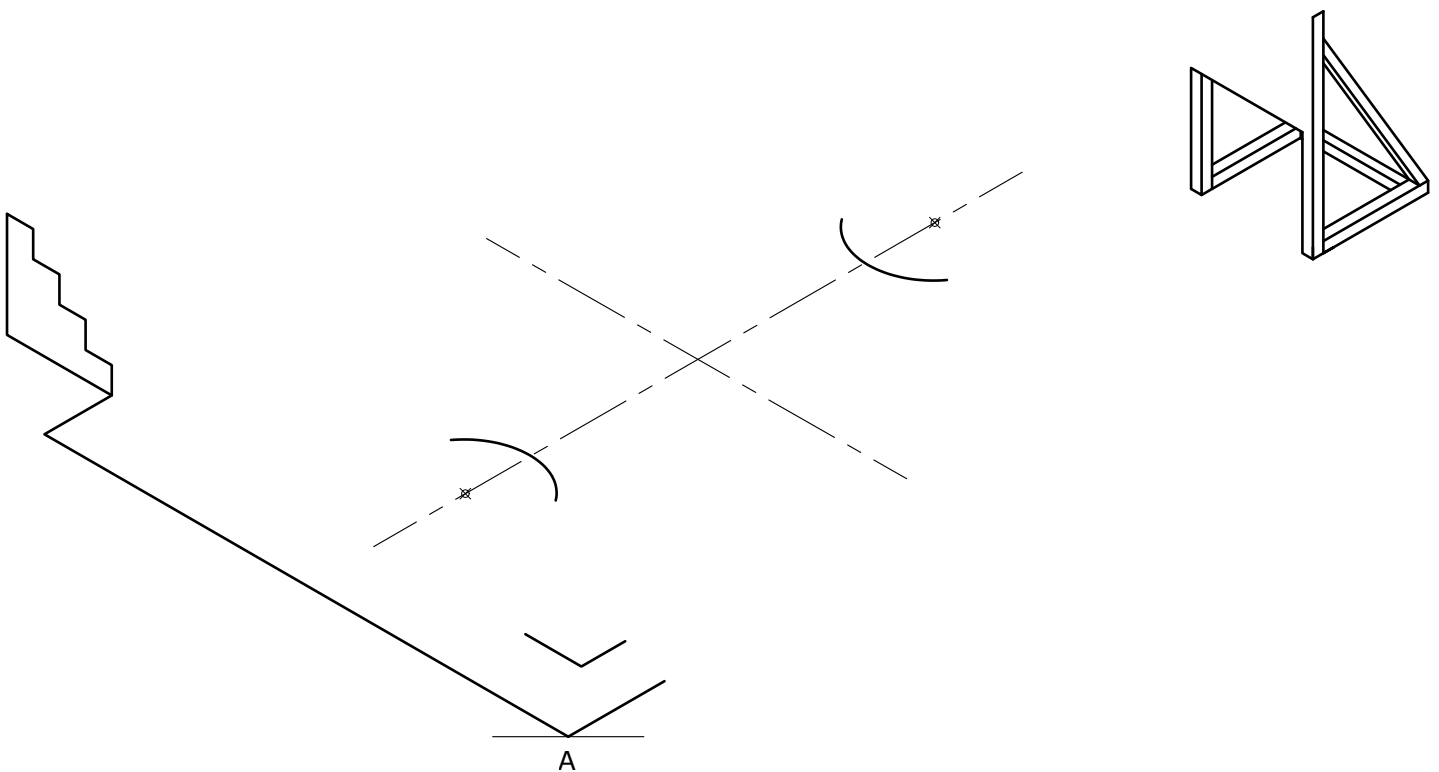
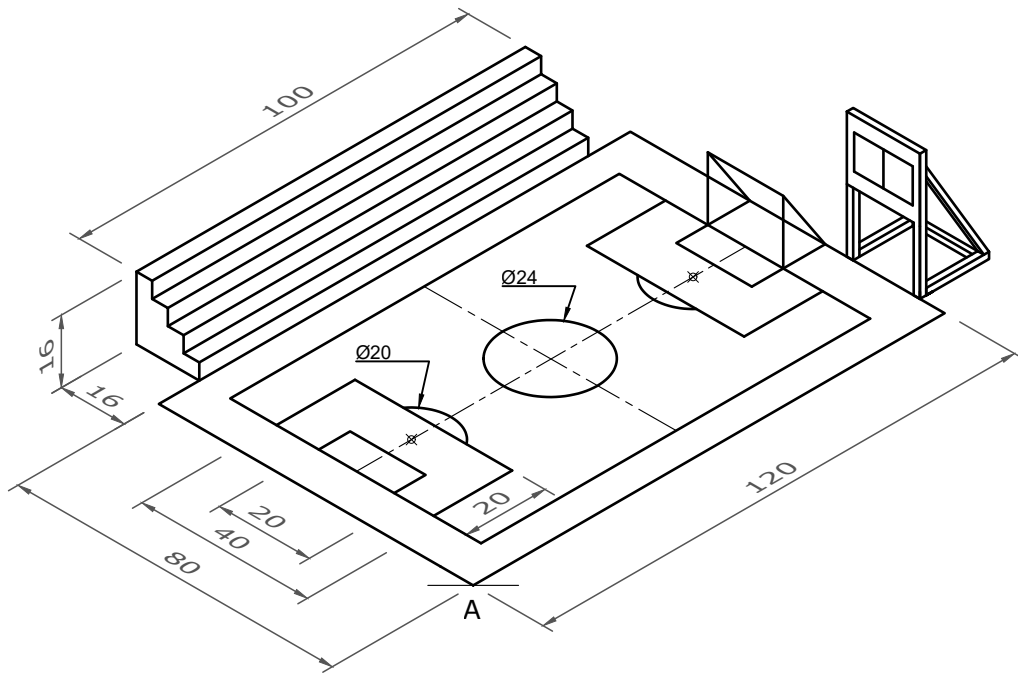
_____(1)

- ii. Indicate **ONE** visual principle employed in part (f).

_____(1)

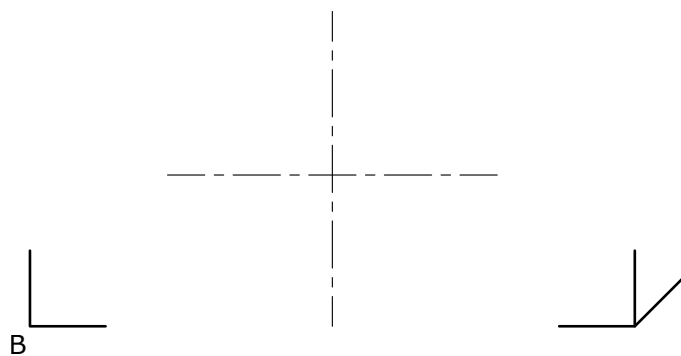
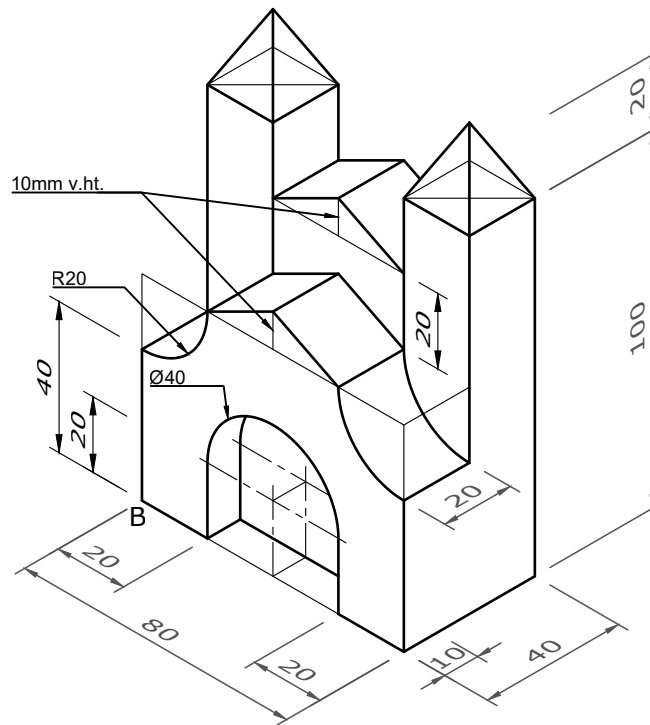
DO NOT WRITE ABOVE THIS LINE

2. a) A dimensioned isometric view of a football pitch is shown below. An incomplete full size version is also given. Complete the isometric drawing, estimating any missing dimensions. (12)

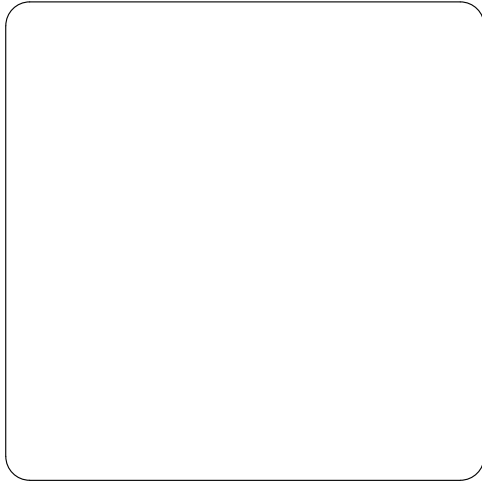


DO NOT WRITE ABOVE THIS LINE

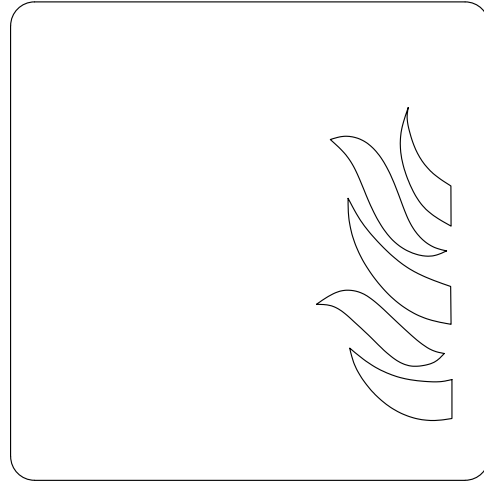
- b) Turn the dimensioned isometric view of this historical building into a cabinet oblique projection using the start lines given. Corner B is given. (12)



3. a) Design a fire safety sign to be placed in a classroom. Draw at least **TWO** freehand preparatory sketches in the space provided. Colour your fire safety sign according to convention. (6)

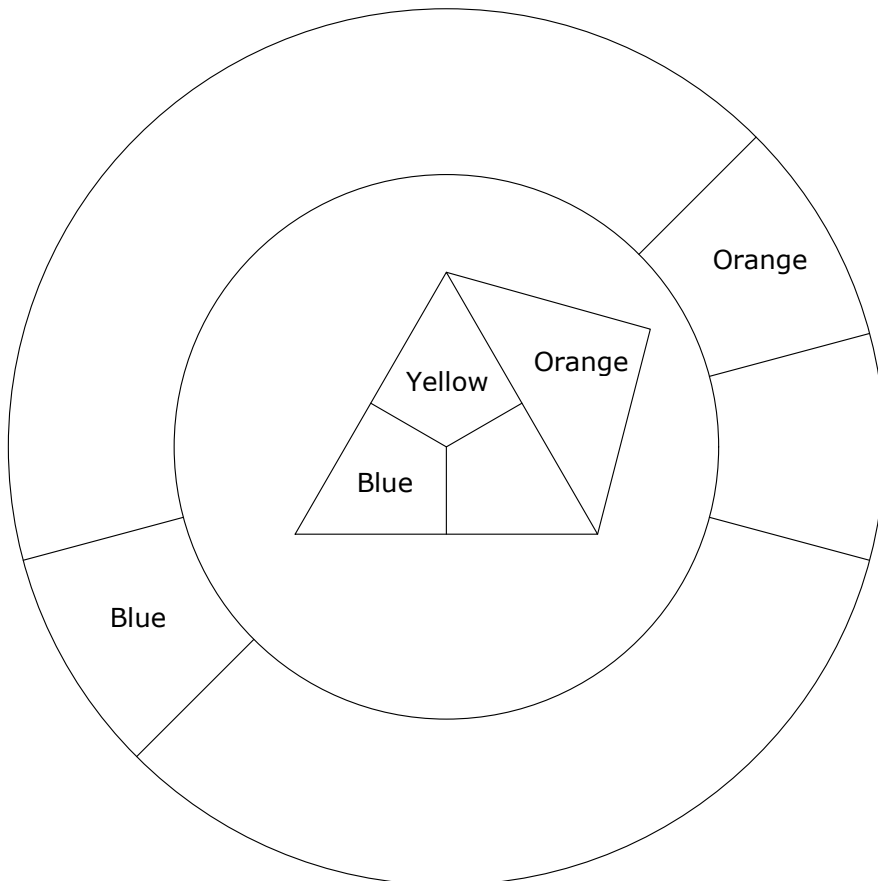


space for preparatory sketches



fire safety sign

- b) Complete the following colour wheel, illustrating the relationship between the primary, secondary and tertiary colours. (6)



c) Answer the following within the context of graphic design:

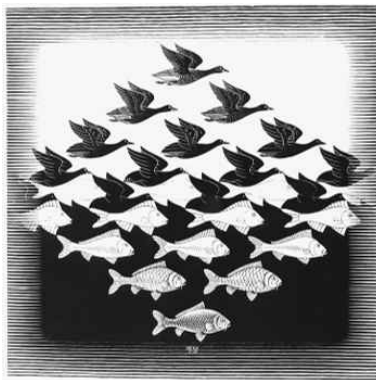
i. Define negative space.

_____ (1)

ii. Define balance.

_____ (1)

iii. Describe the following picture in terms of balance and negative space.



source: https://en.wikipedia.org/wiki/Sky_and_Water_I

_____ (3)

d) State the purpose of layers in a desktop publishing software.

_____ (1)

e) Explain how layers are used to add text to an image.

_____ (1)

Ice Cream Cones Sold	
Flavour	Number of Ice Cream Cones
Vanilla	
Chocolate	
Strawberry	
Butterscotch	
Pistachio	
Coffee	

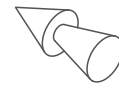
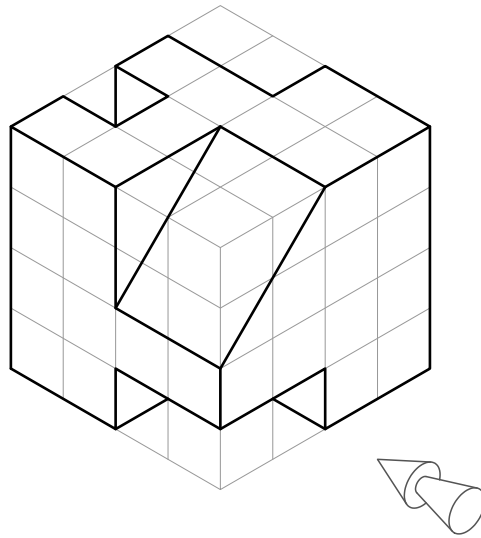
Key:  = 50 cones

(1)

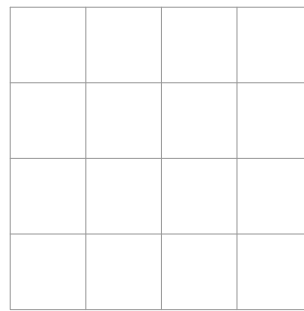
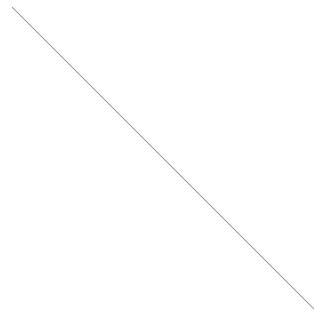
(2)

DO NOT WRITE ABOVE THIS LINE

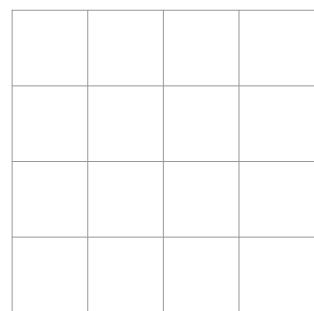
5. a) Draw the front elevation, the end elevation and the plan of the isometric block below in the grids provided. Show hidden detail. (6)



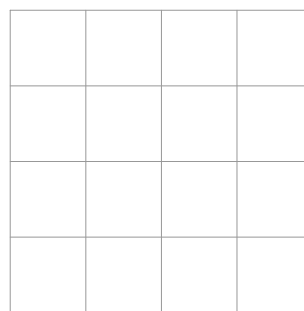
FRONT ELEVATION



PLAN

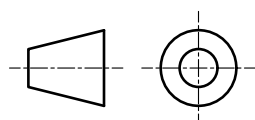


END ELEVATION

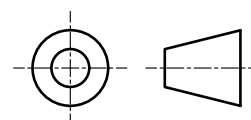


FRONT ELEVATION

- b) Circle the letter which corresponds to the symbol of the orthographic projection above. (2)



A



B

- c) The following computer programme was written to produce a textile design. Mirror the plotted design using the vertical and horizontal centre lines as the mirror lines (lines of symmetry). (6)

DATA: A = 50; B = 100; C = 150; D = 200; E = 250; F = 300; G = 350; H = 400; I = 450
J = 500; K = 550; L = 600; M = 650; N = 700.

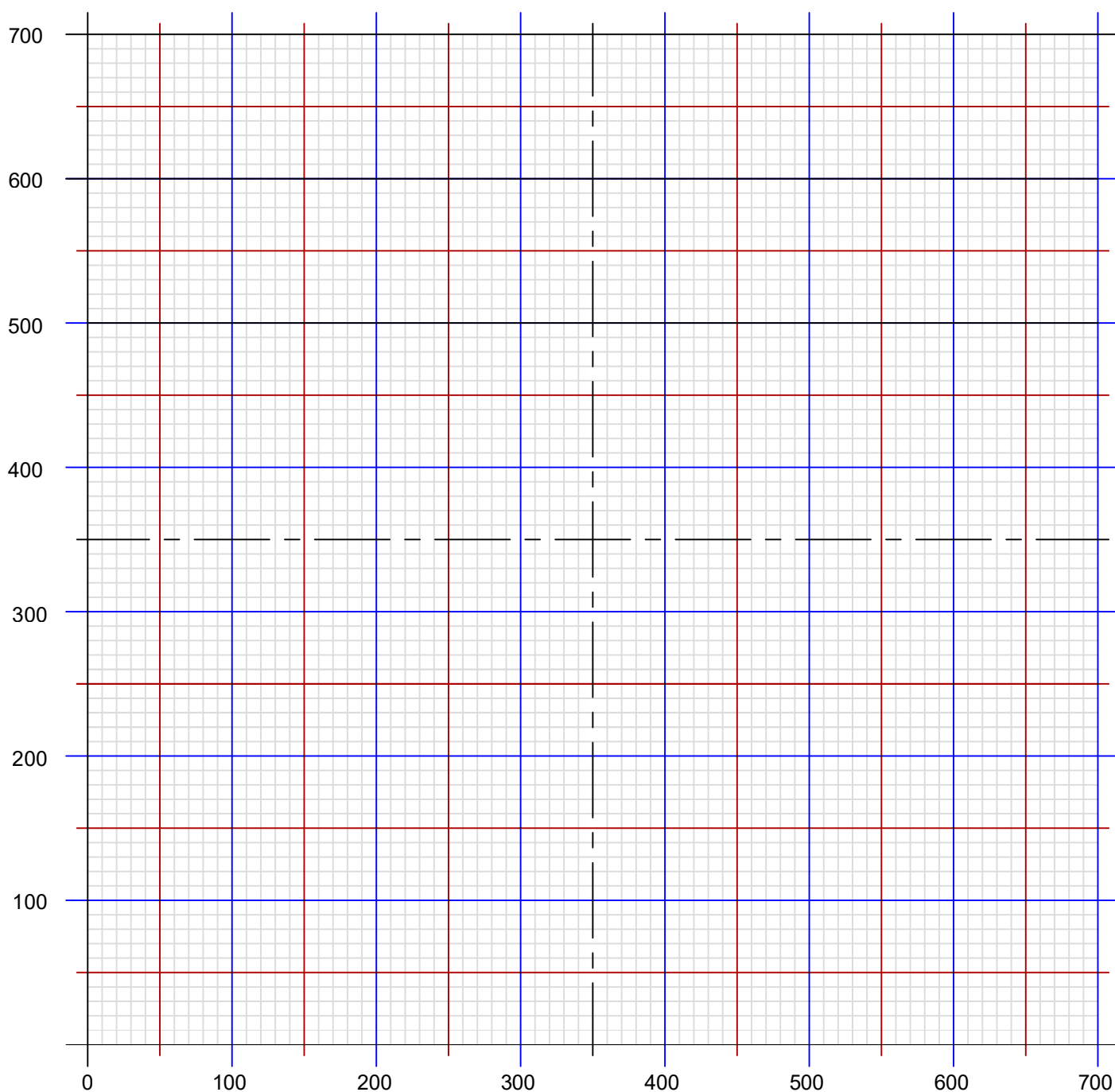
ACI 1: MOVE A,H; DRAW A,J; DRAW C,J; DRAW C,H; DRAW A,H;

ACI 5: MOVE A,K; DRAW A,M; DRAW C,M; DRAW C,K; DRAW A,K;

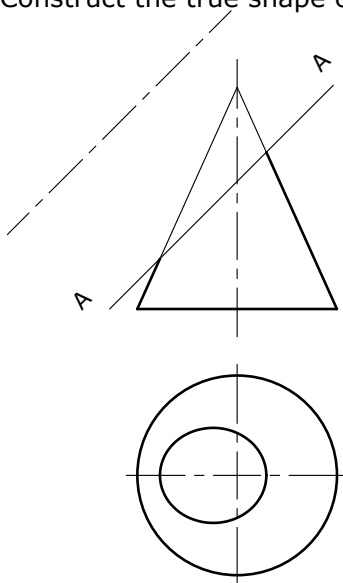
ACI 3: MOVE F,H; DRAW D,H; DRAW D,M; DRAW F,M; DRAW E,L; DRAW E,I; DRAW F,H;

ACI 2: MOVE G,H; DRAW F,I; DRAW G,J; DRAW F,K; DRAW F,L; DRAW G,M.

COLOUR	RED	BLUE	GREEN	YELLOW
ACI No.	1	5	3	2

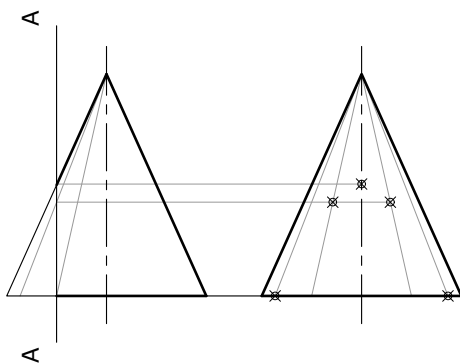


6. a) Construct the true shape of cut produced by cutting plane A-A and write down its name. (5)



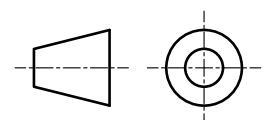
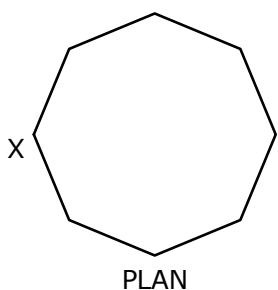
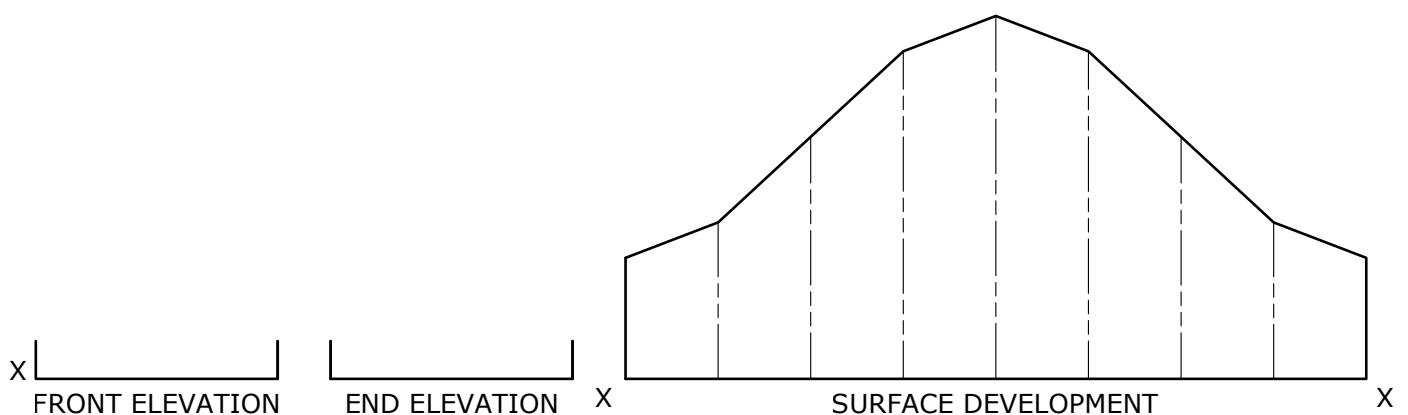
Name of true shape produced: _____

- b) Another true shape of cut is produced when the cone is cut perpendicularly. Draw in freehand this new cut and write down its name. (4)



Name of true shape produced: _____

- c) A partially drawn orthographic projection and a full surface development of a truncated solid are given below. Complete the front and the end elevations. (6)





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EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL
2026 MAIN SESSION**

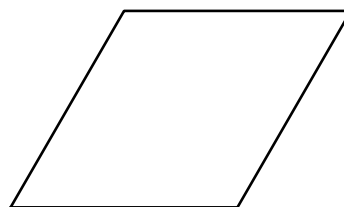
SUBJECT: **Graphical Communication**
PAPER NUMBER: II - Level 1 - 2
DATE: 18th May 2026
TIME: 2 hours 5 mins

General note: Clear and legible handwritten answers in pen or pencil are accepted where long answers are required.

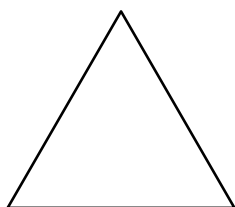
1. Label the following line-types and shapes using the following:
bold line, equilateral triangle, rhombus, construction line, centre line, square



a)



b)



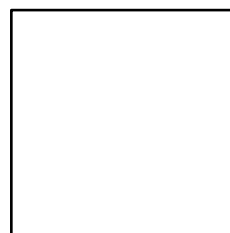
c)



d)



e)



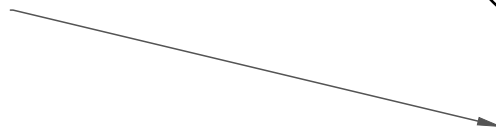
f)

(Total: 3 marks)

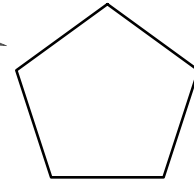
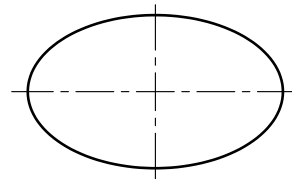
2. a) Match the following labels with the shapes.

(4)

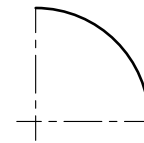
1. PENTAGON



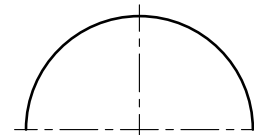
2. SEMI-CIRCLE



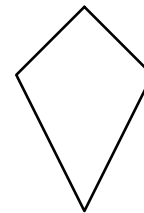
3. ELLIPSE



4. QUADRANT



5. KITE



b) Using a pair of compasses, bisect line AB.

(1)

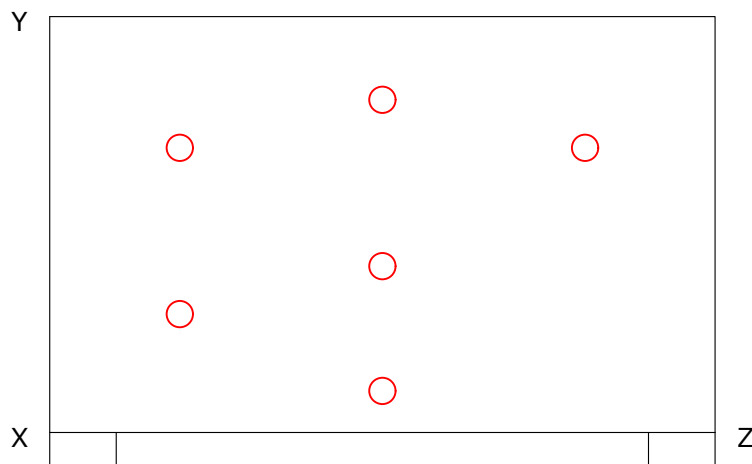
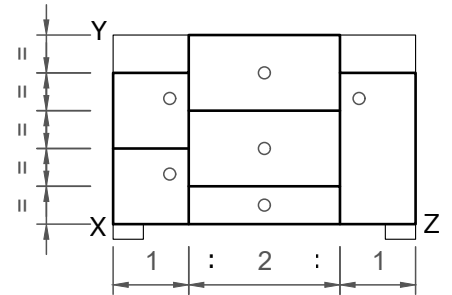


c) Construct **TWO** concentric circles of R15 and R25 on the centre line below.

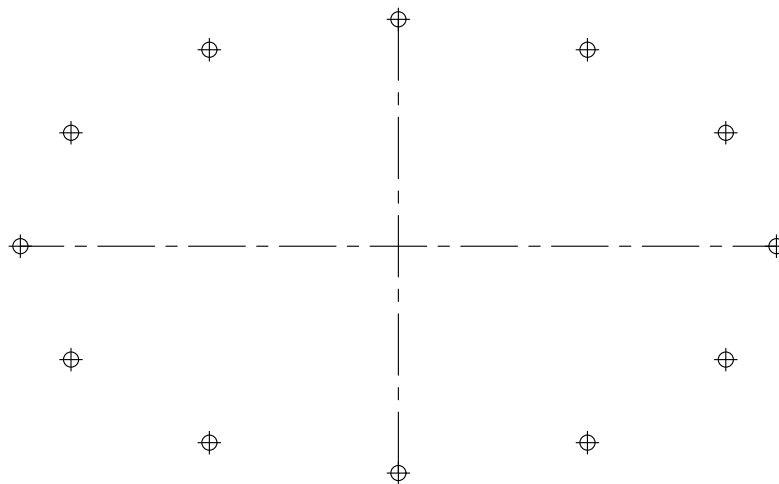
(2)



3. a) A design for a TV unit is shown below. The unit's height XY is divided into 5 equal parts. The base XZ is divided in the ratio of 1:2:1. Use the start lines provided to complete the unit. (4)

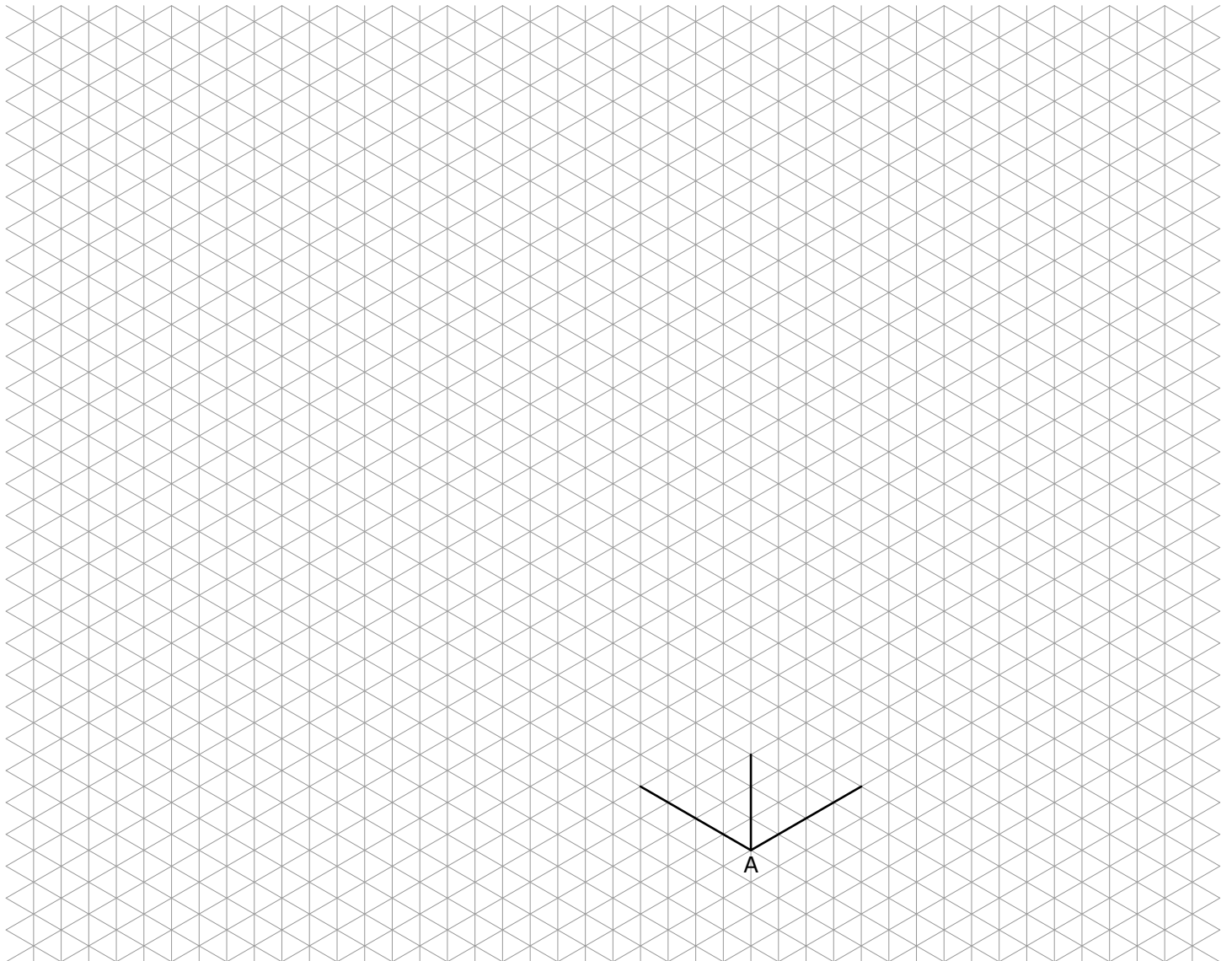
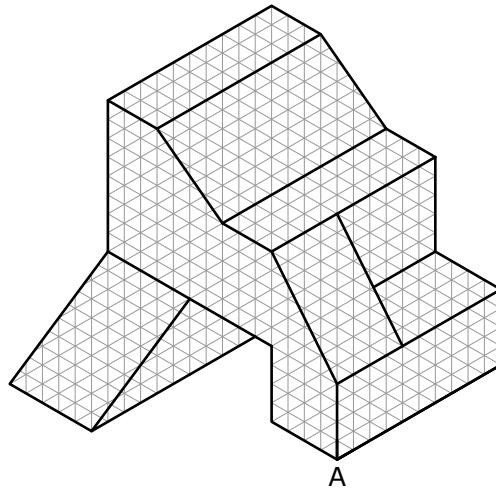


- b) Draw the profile of an ellipse through the given points of intersection. (2)



- c) Find and mark the **TWO** focal points, F1 and F2, of the ellipse above. (2)

4. a) Draw the toy block below using the given grid and start point A. (8)
b) Write down the name of this pictorial drawing. (2)



Name of pictorial drawing: _____

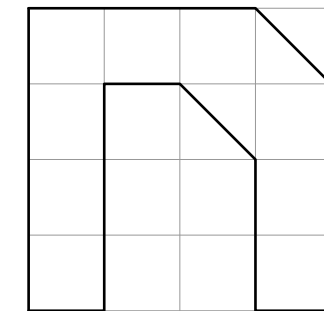
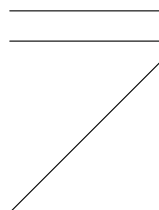
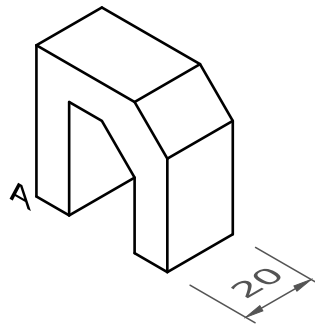
5. A drawing of a simplified letter N in isometric is given below.

a) Using the grids, complete the end elevation and the plan, including hidden detail. (4)

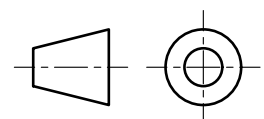
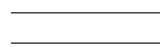
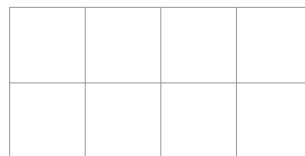
b) Label the end elevation and plan. (2)

c) Label the projection symbol. (2)

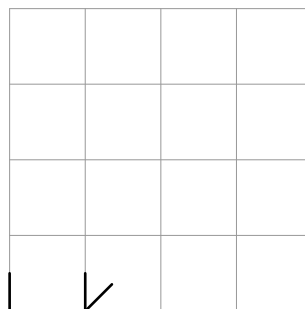
d) Convert the letter to cabinet oblique projection, using the start lines. (6)



A
FRONT ELEVATION



projection symbol



A
cabinet oblique projection

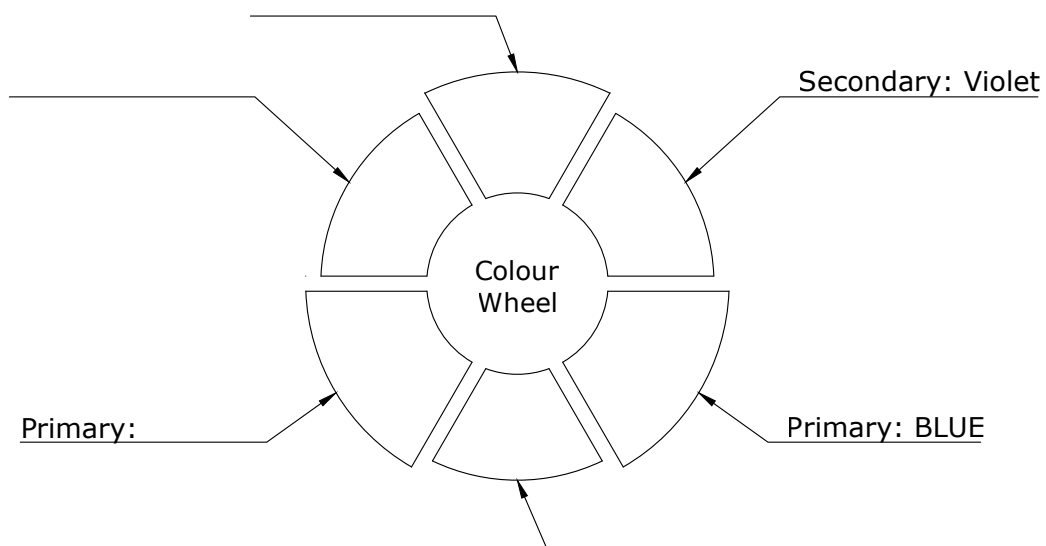
6. a) List the following as either shapes or forms.
squares, cubes, pyramids, rectangles, circles, spheres (3)

shapes

forms

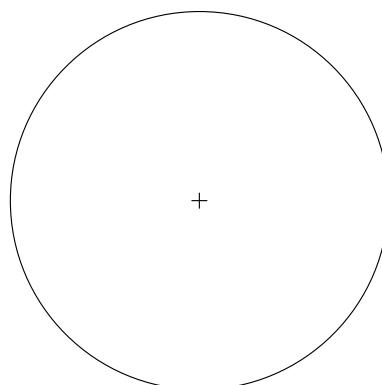
- b) Explain the difference between shapes and forms. (2)

- c) A colour wheel is given below. It has three primary colours and three secondary colours. Fill in the missing labels and colour the parts. (4)



- d) A survey carried out at a secondary school showed the preference of recreational activities amongst students aged 15 years. The data is listed below. Create a pie chart using the given start lines and a matching legend to explain visually the results. (6)

Data:
Cycling: 90 students
Swimming: 45 students
Paragliding: 30 students
Football: 195 students



pie chart

Legend:
Cycling: ☐
Swimming: ☐
Paragliding: ☐
Football: ☐

7. a) Define vector graphics.

_____(1)

b) State **ONE** advantage of vector over raster graphics.

_____(1)

c) Describe the function of text alignment.

_____(1)

d) Describe the function of the pen tool.

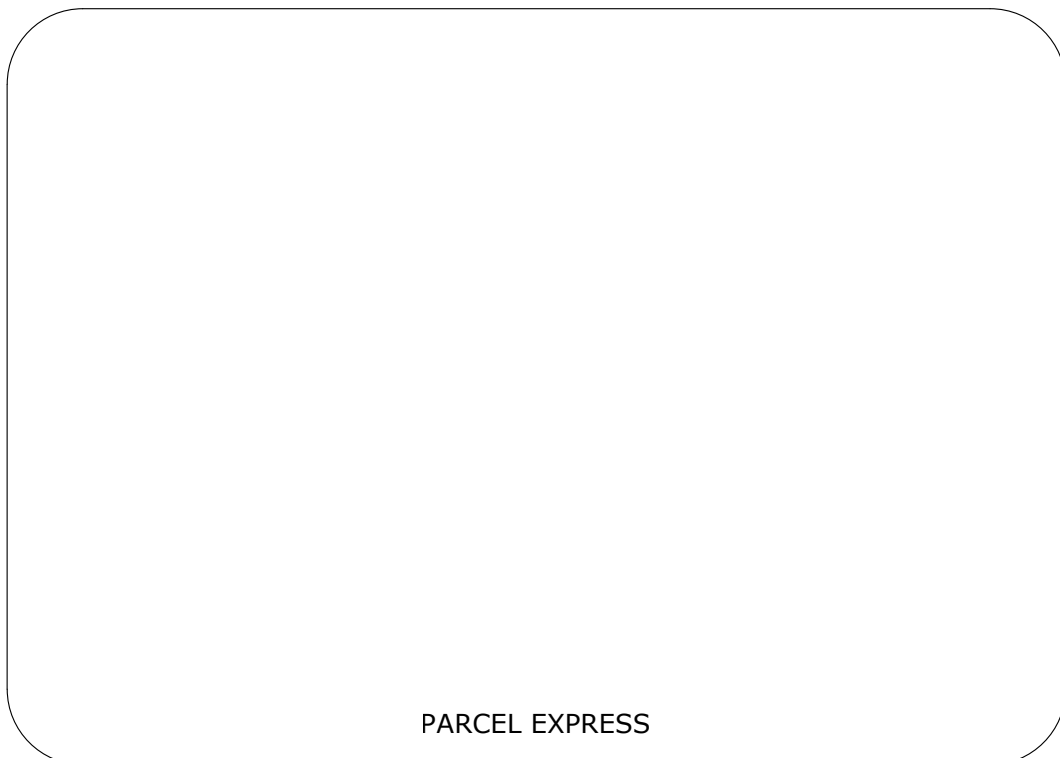
_____(1)

e) In the space provided below, produce a freehand sketch of a logo for a parcel delivery company with the name:

PARCEL EXPRESS

Your sketch must convey an idea of speed and security. (4)

Space for freehand sketch.

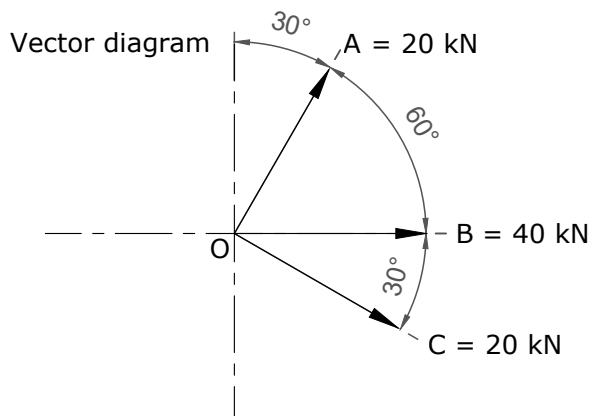


PARCEL EXPRESS

8. a) Complete the sentence below.

A vector is a quantity consisting of _____ and _____. (2)

b) To a scale of 10 mm representing 10 kN, construct a force diagram from the given vector diagram shown below. The force diagram shows three vectors; A = 20 kN, B = 40 kN and C = 20 kN. You are required to find the resultant of the three forces. (4)



Resultant = _____ kN

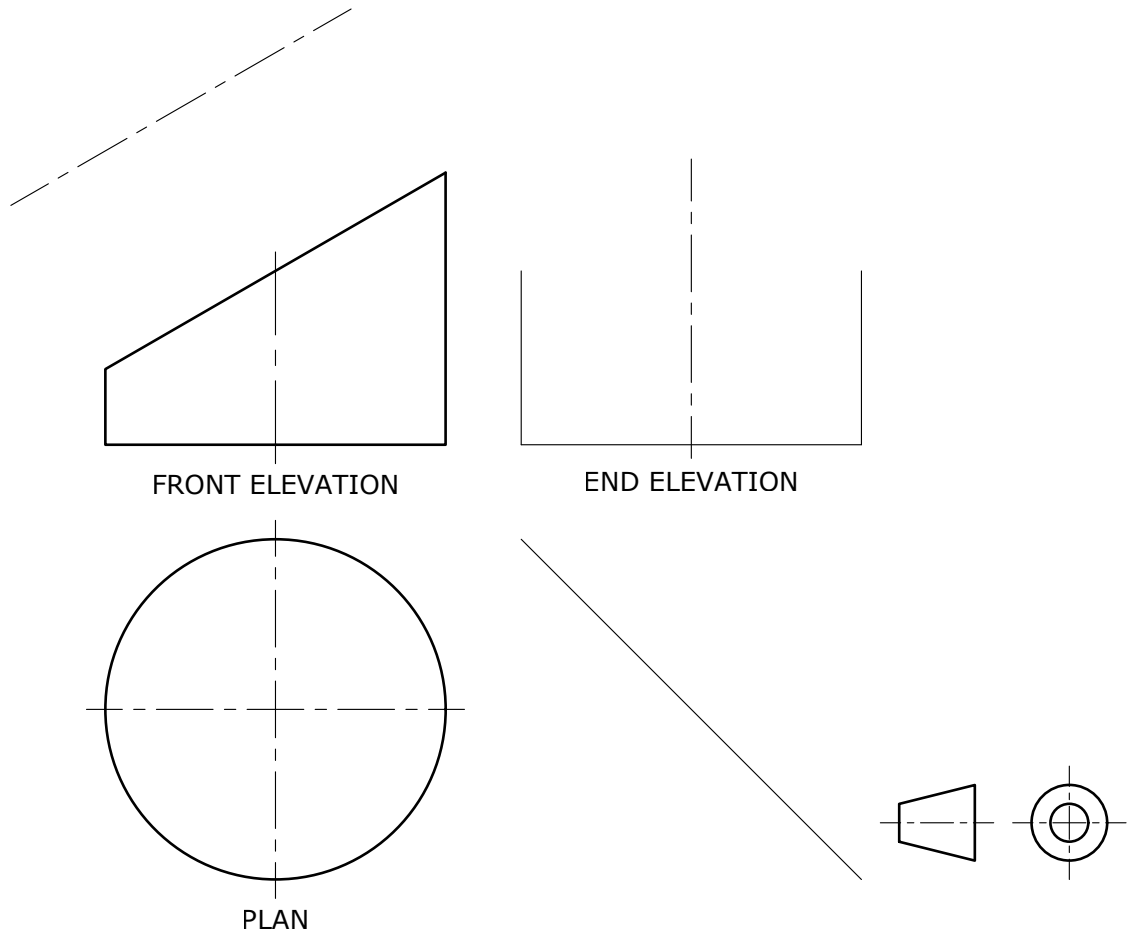
c) State the difference between a resultant and an equilibrant.

_____ (2)

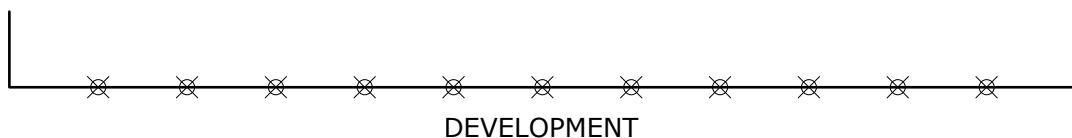
9. A truncated cylinder is given below.

- Using the given plan, divide the circle into 12 equal parts and project the lines on both the front and end elevations. (1)
- Project the cut on the end elevation. (2)
- Project the true shape of the cut. (2)

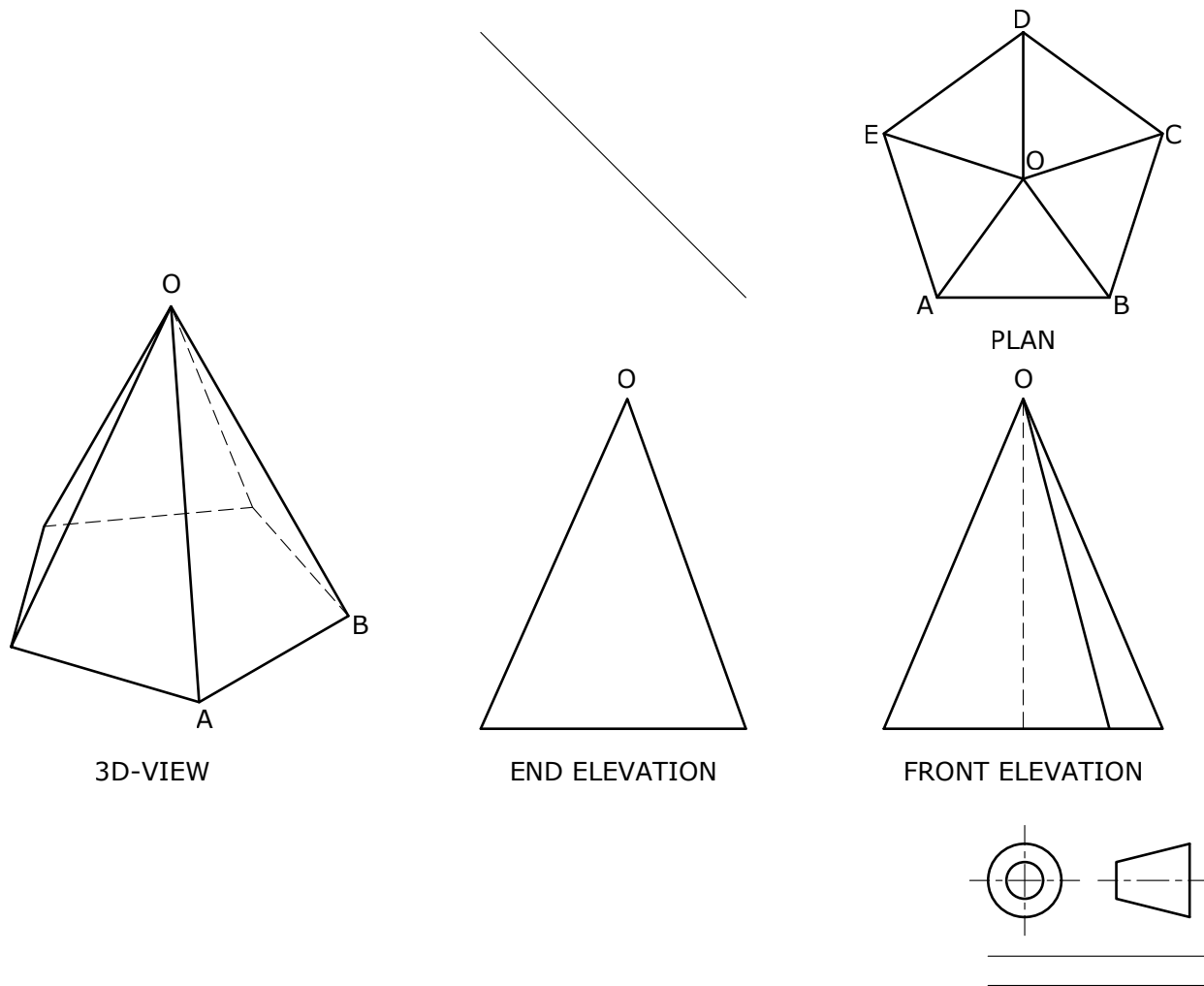
TRUE SHAPE
OF CUT



- Using the given start line below, construct the development of the truncated cylinder taking measurements from the front elevation above. (2)



10. a) A pictorial drawing and an orthographic projection of a pentagonal-based pyramid are given. Add the **TWO** missing edges, in the front and end views. Label the projection symbol. (3)



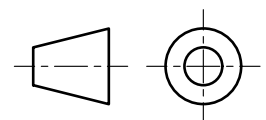
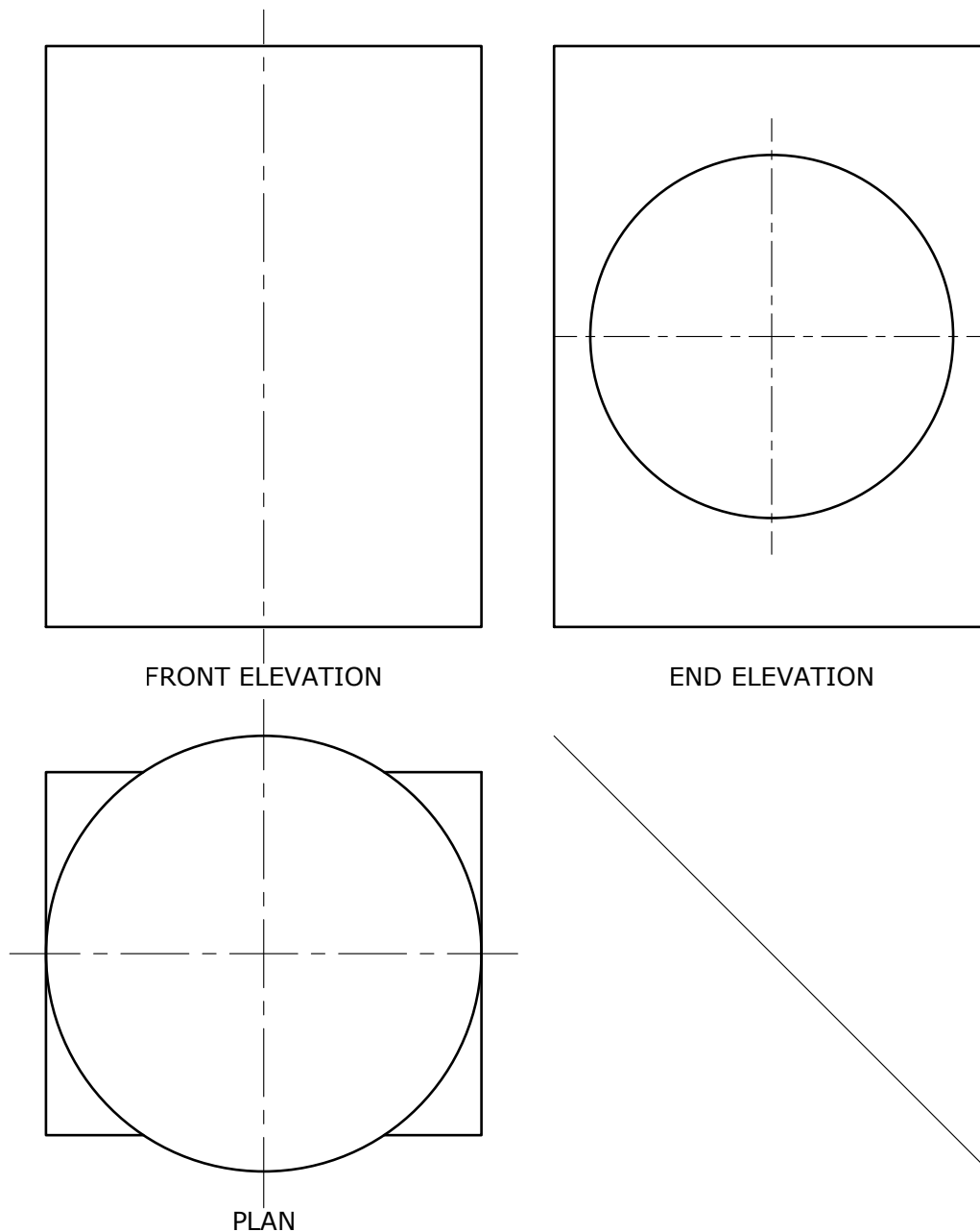
- b) State the true length of the slanting edge of the pyramid on the end elevation and complete the development below. (4)



True length: _____ mm.

11. An orthographic projection of two intersecting cylinders of different diameters is given below.

Using the given views, construct the seam of intersection between the two cylinders. (5)



12. a) The following computer programme is written to create a design.

DATA: A = 50; B = 100; C = 150; D = 200; E = 250; F = 300; G = 350; H = 400.

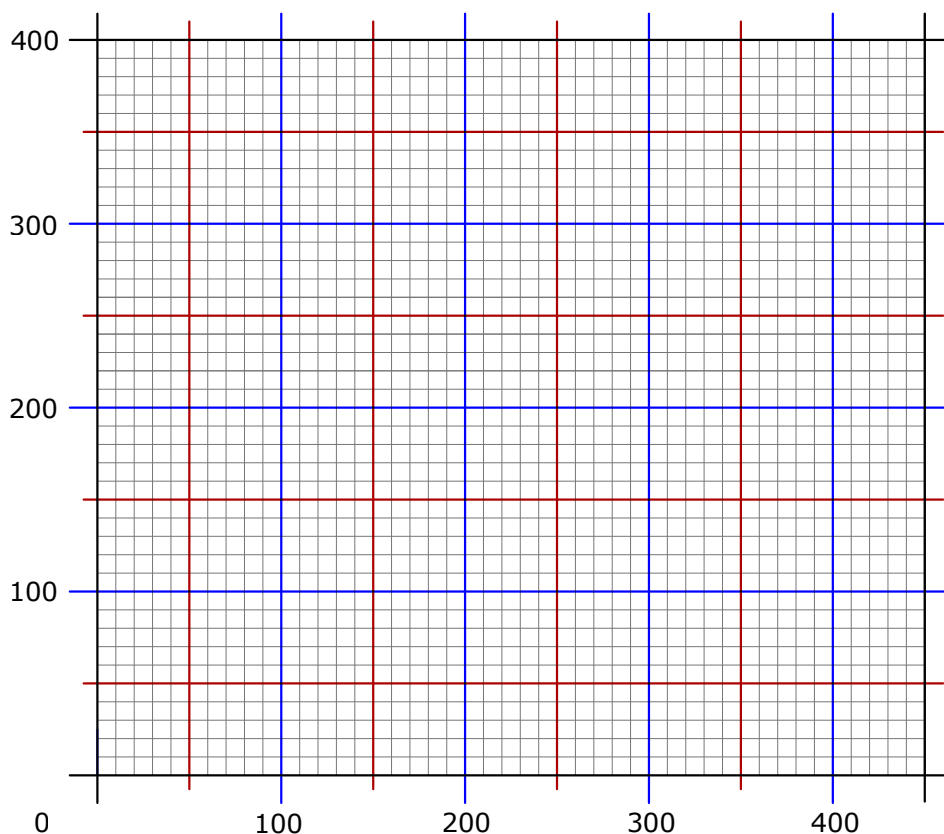
ACI 1: MOVE A,E; DRAW A,G; DRAW C,G; DRAW C,E; DRAW F,C; DRAW F,G; DRAW H,G;
DRAW H,E;

ACI 3: MOVE C,A; DRAW C,C; DRAW A,E; DRAW C,E; DRAW D,G; DRAW E,G; DRAW F,E;
DRAW H,E; DRAW F,C; DRAW C,A.

COLOUR	RED	GREEN
ACI No.	1	3

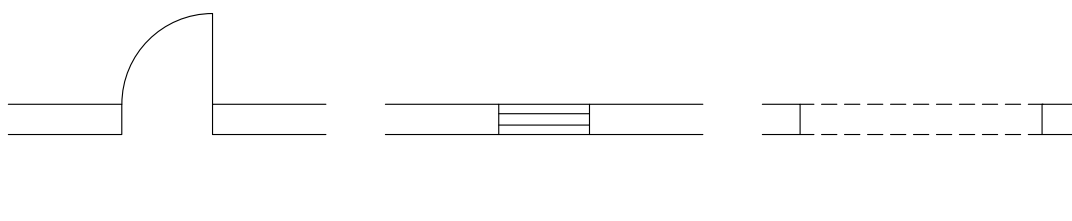
The **DATA** statement specifies the numeric values (in pixels) of given variables. **MOVE**, positions the cursor at a new location without drawing a line. **DRAW** draws a line from a current location to a new location. The instruction **ACI No.** makes the images that follow the instruction appear in the colour associated with the number.

Plot the image produced by this programme on the 450 X 400 grid given below. (5)



b) Label the following architectural symbols: (3)

archway, door, window



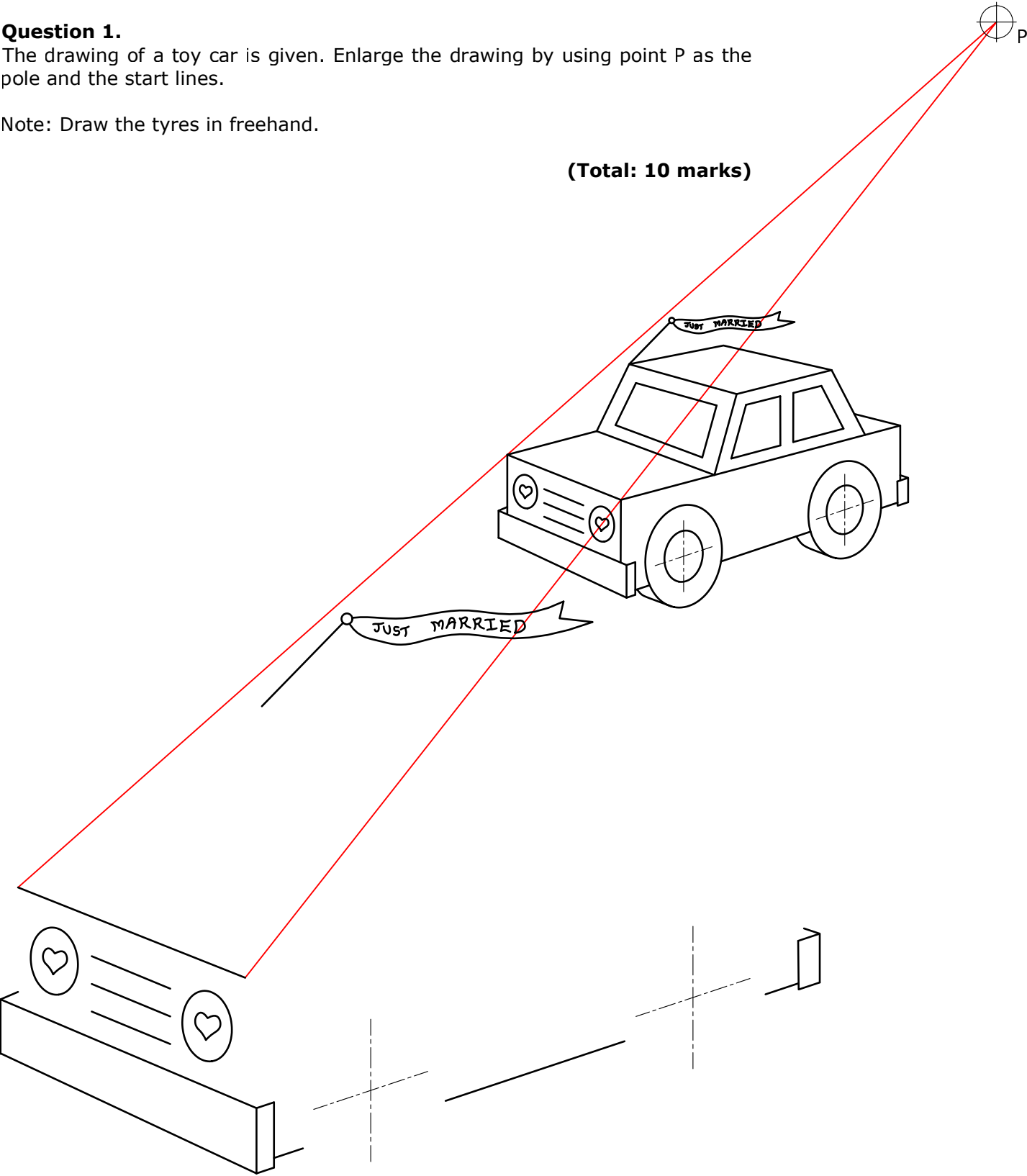
SUBJECT:
PAPER NUMBER:
DATE:
DURATION:

Graphical Communication
II - Level 2-3
18th May 2026
2 hours 5 mins

Question 1.
The drawing of a toy car is given. Enlarge the drawing by using point P as the pole and the start lines.

Note: Draw the tyres in freehand.

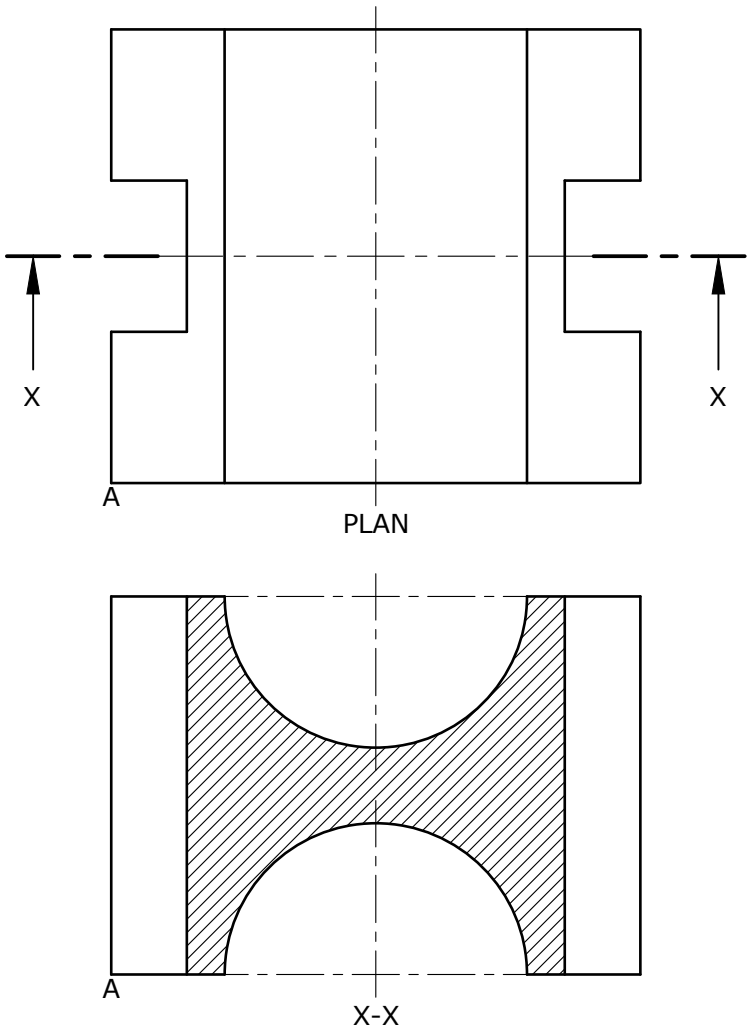
(Total: 10 marks)



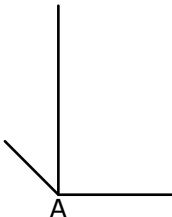
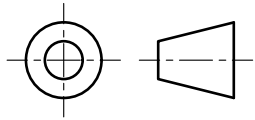
Question 2.
The plan and the sectional view X-X of a wooden toy block are given below.

- a. Draw a pictorial freehand sketch of the wooden toy block. (4)
- b. Take measurements directly from the views to construct a complete cabinet oblique projection. (8)

(Total: 12 marks)



space for freehand sketch



DO NOT WRITE ABOVE THIS LINE

Question 3.

An initiative has been taken by a particular secondary school to start distributing peeled, cut, and packed fruit to students once a week. A survey was conducted to identify how many students wanted to benefit from this initiative and which fruit they preferred from those offered. Incomplete Table A shows the overall number of students and which fruit they prefer.

The incomplete pictograph compliments Table A, showing the same information graphically. Table B shows the percentages of the survey.

- a. Complete Table A (number of students who chose apples).

b. Complete the pictograph (pictogram/s for pears).

c. Complete the pictograph (pictogram/s for pineapple).

d. Complete the isometric bar graph that shows the percentages from Table B.

e. Fill in the legend for Table B.

f. Colour the bar graph according to the legend in Table B.
- (1)

(2)

(1)

(4)

(2)

(2)

(Total: 12 marks)

TABLE A

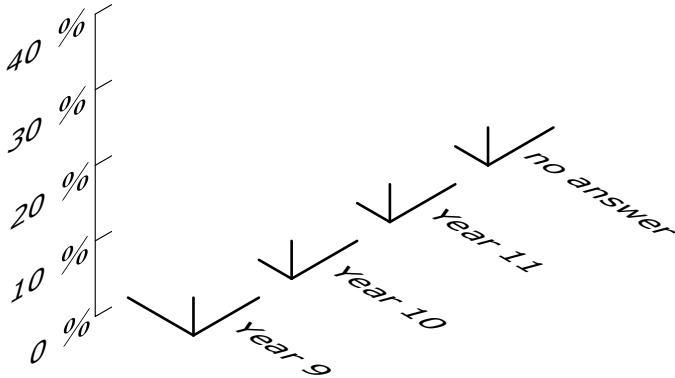
PICTOGRAPH

TABLE B

number of students	fruit
	apples
300	bananas
150	oranges
250	pears
350	pineapples
200	grapes

every pictogram represents 50 students						
						
						
						
						
						
						

percentages from the survey		legend / colour
30%	Year 9	
40%	Year 10	
20%	Year 11	
10%	no answer	



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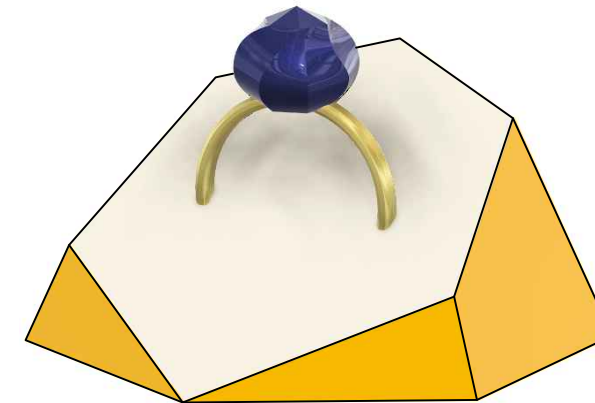
Question 4.

The pictorial view of a display case for a diamond ring is shown on the right. This case is in the shape of a truncated hexagonal-based pyramid. The incomplete development of this case (without its top and bottom) and an incomplete plan are given. From these incomplete development and plan:

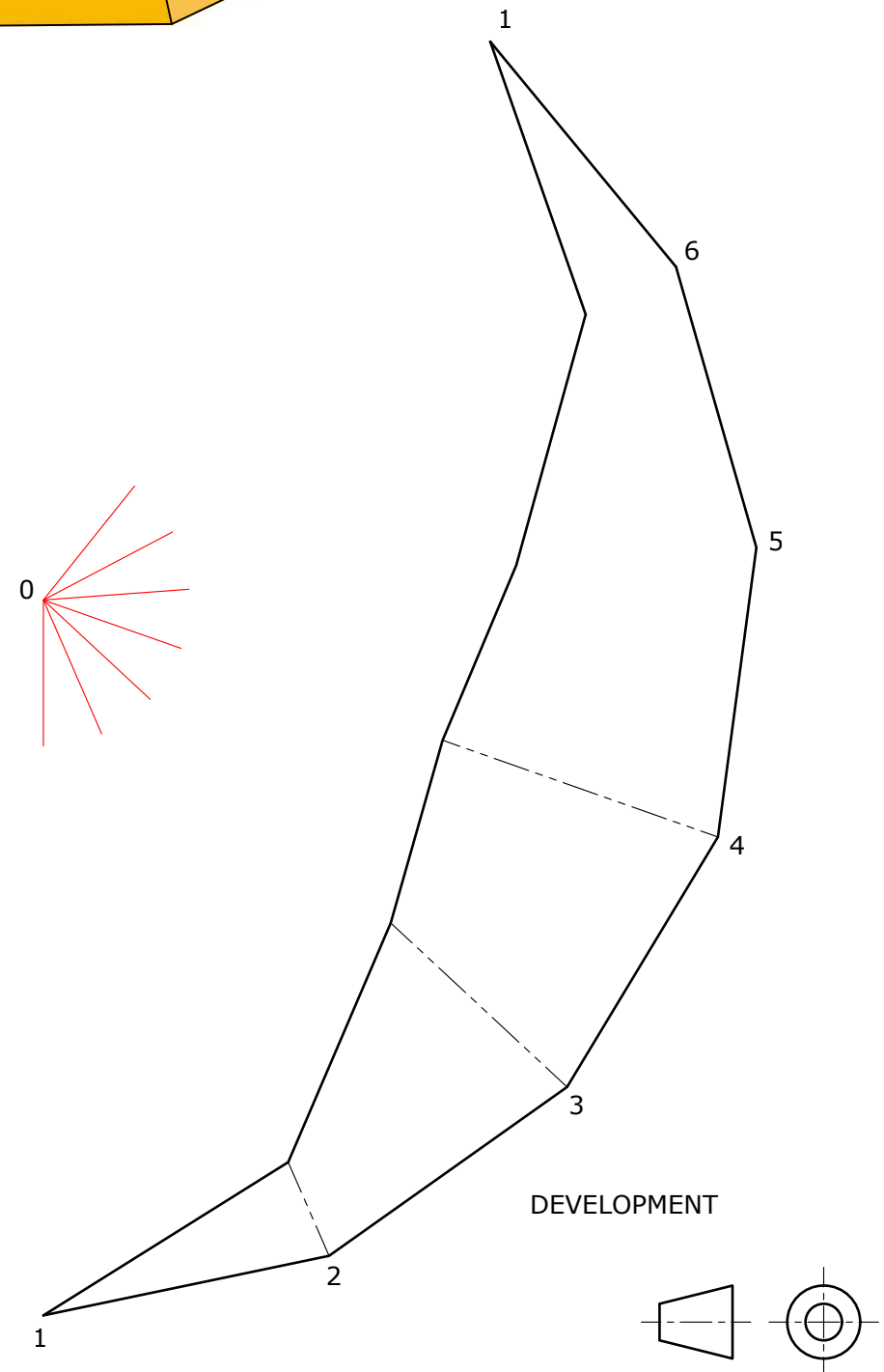
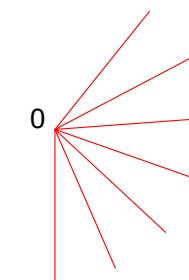
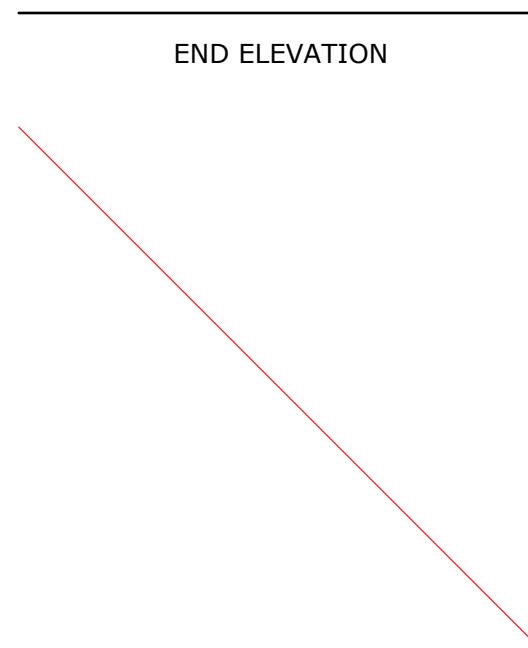
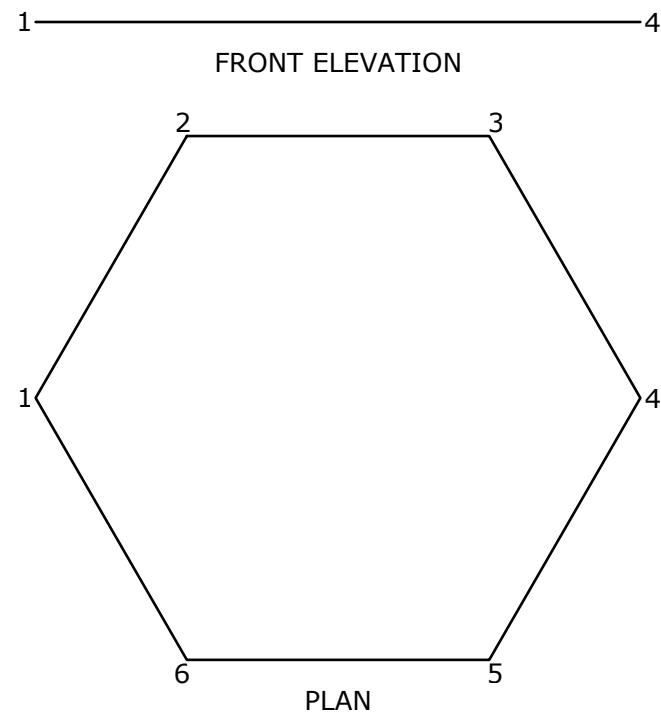
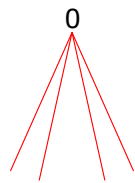
- draw the **TWO** missing fold lines on the development; (2)
- construct the front elevation; (4)
- project the full plan; (3)
- project the end elevation. (3)

Note: Show hidden detail.

(Total: 12 marks)



pictorial view
of display case



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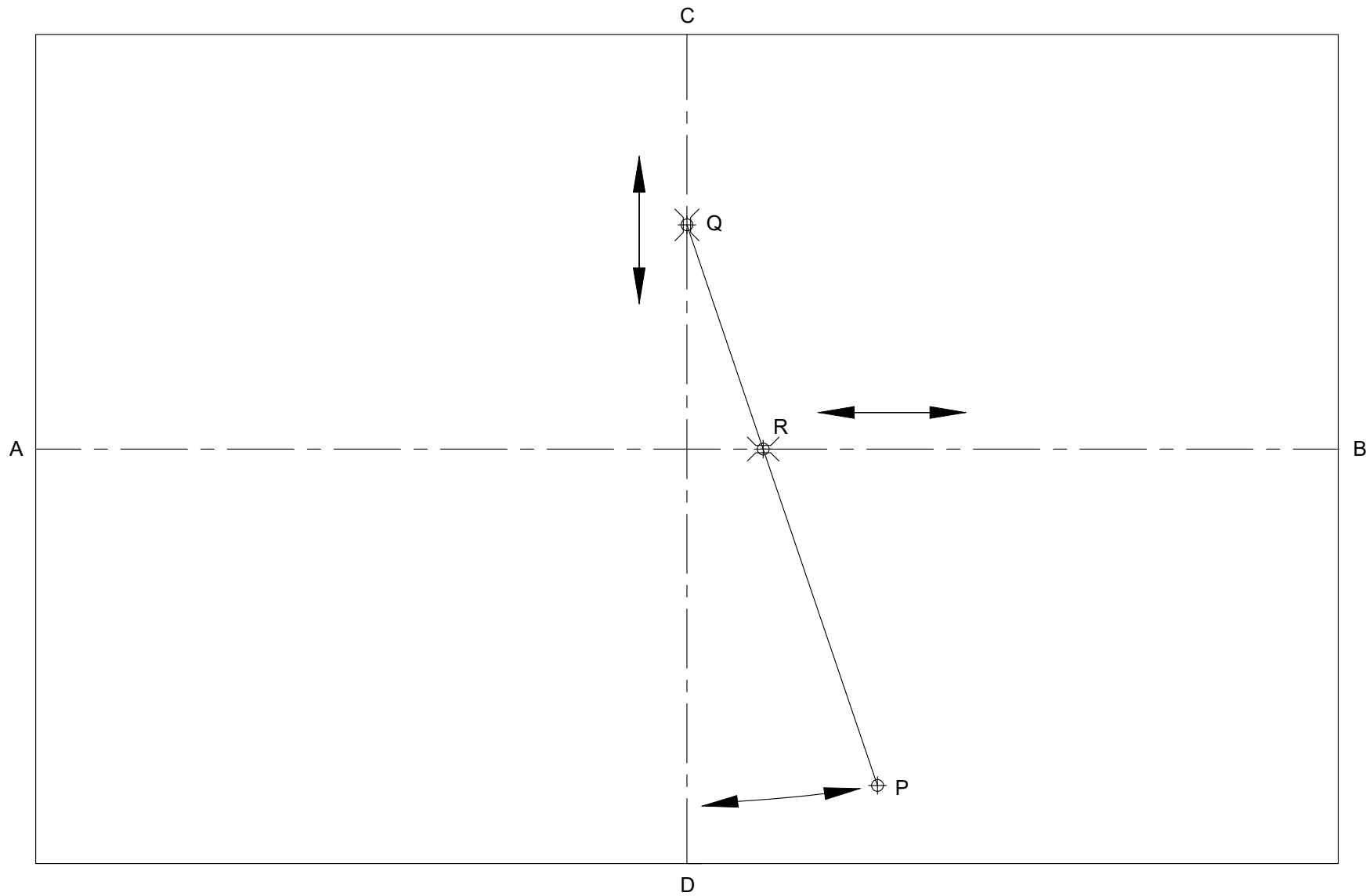
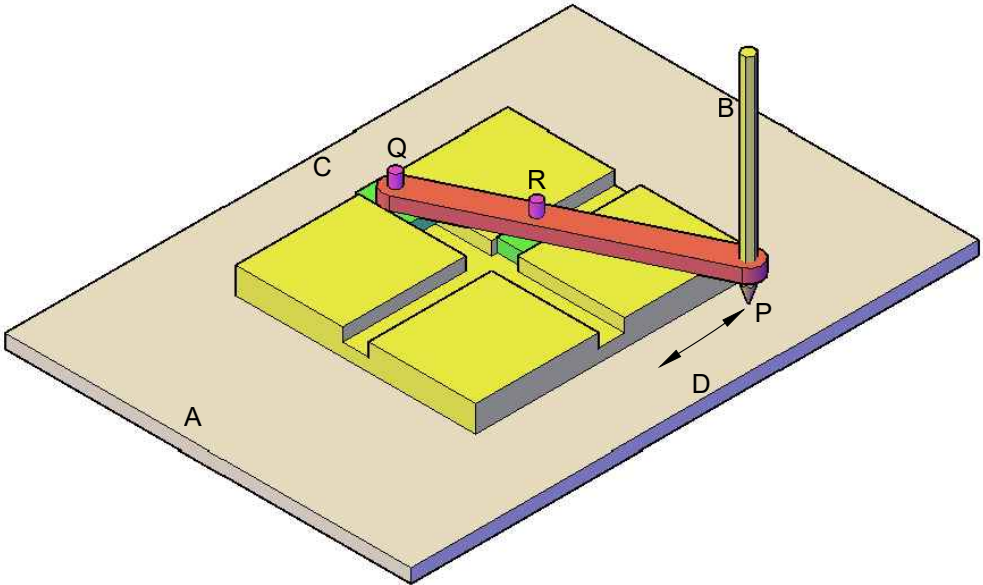
Question 5.

An illustration of an educational mechanical toy is given on the right. The toy works in the following manner:

- Slide R slides along slot A-B.
- Slide Q slides along slot C-D.
- The two slides are pin-jointed to link QRP.
- The link QRP turns by pushing end P while slides Q and R move in their respective slots.

- a. Plot the locus of point P for one complete turn. (10)
b. Label the geometrical name of the generated locus in the space provided. (2)

(Total: 12 marks)



Geometrical name of the locus: _____

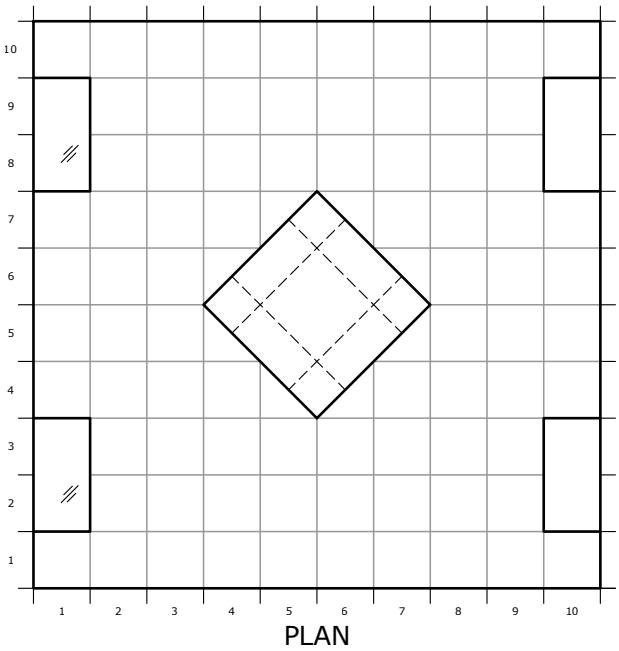
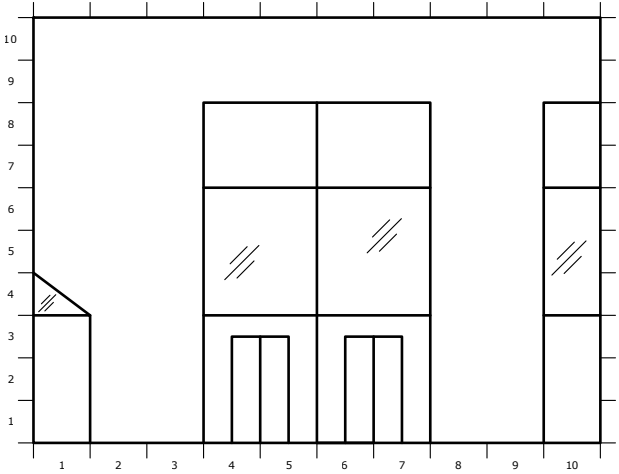
DO NOT WRITE ABOVE THIS LINE

Question 6.

Two orthographic views of a museum display room are given on the right. The room is made up of four displays on the side and one main central display. Using the given start lines and VP1, draw an estimated single point perspective of the museum display room.

Note: Two additional vanishing points, VP2 and VP3, are given to construct the central display.

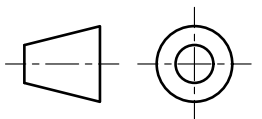
(Total: 12 marks)



VP2

VP1

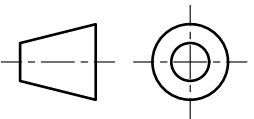
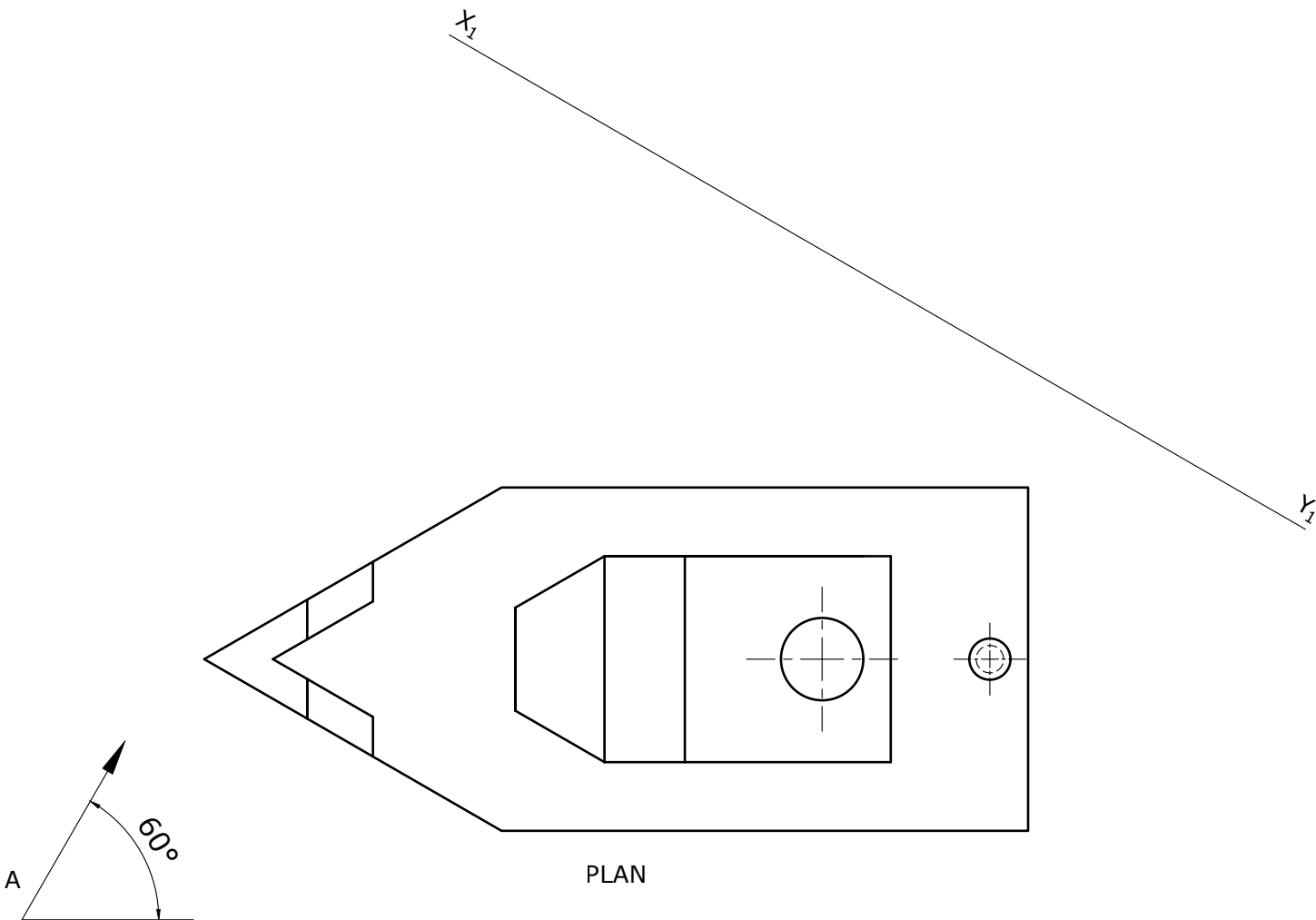
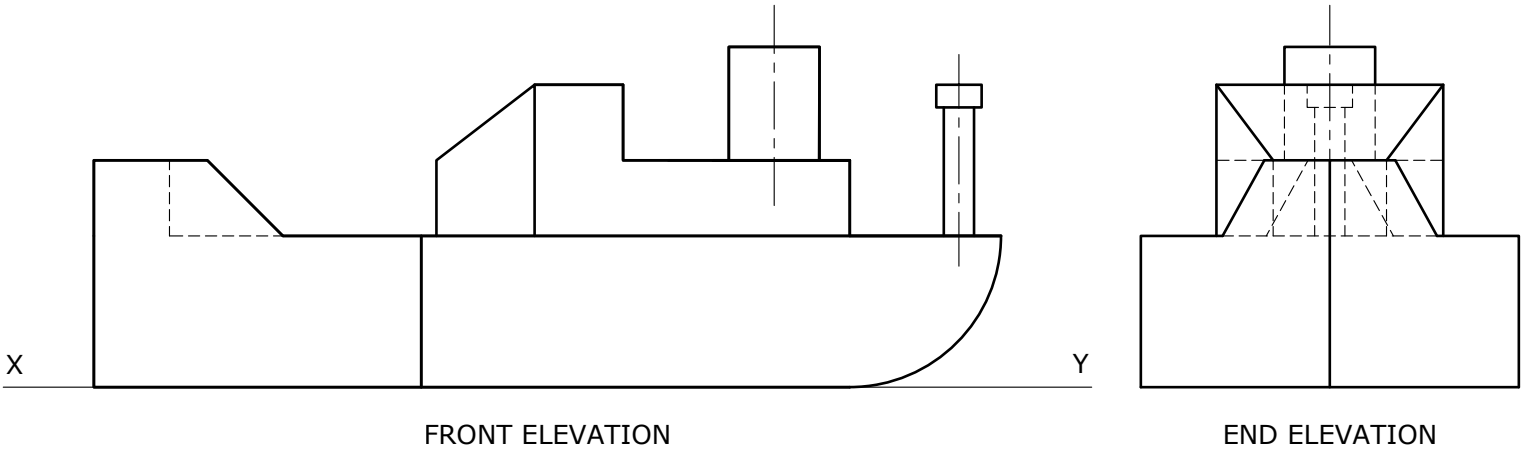
VP3



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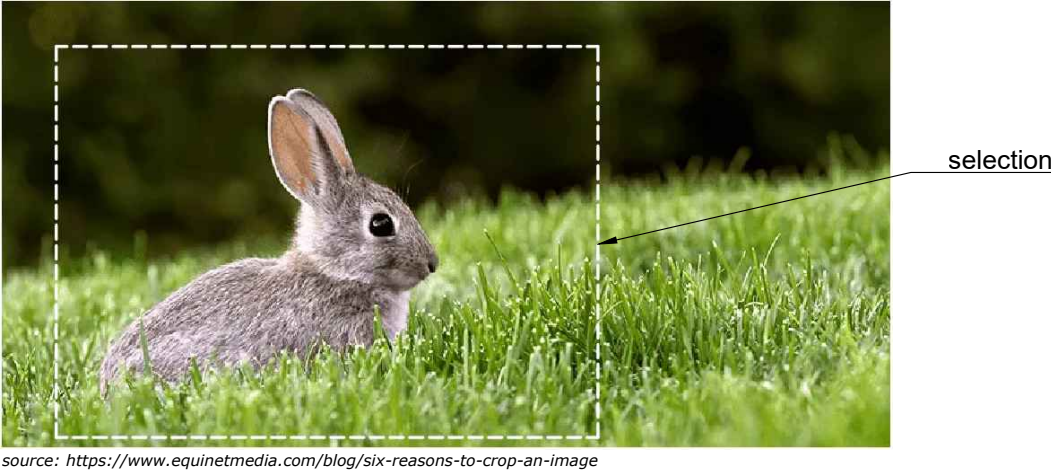
Question 7.
Three orthographic views of a toy boat are given below. Project an auxiliary view as seen from the direction of arrow A on line $X_1 - Y_1$.
Note: Do **not** show hidden detail.

(Total: 15 marks)



DO NOT WRITE ABOVE THIS LINE

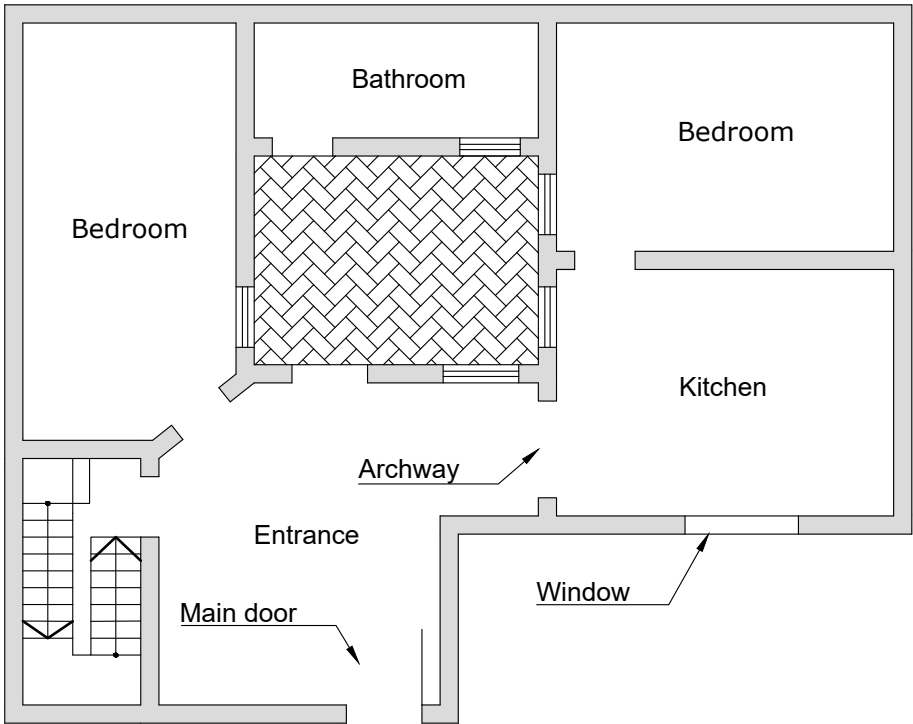
Question 8.
Tom is manipulating the image shown below. He is using a variety of tools in his software to change and modify the image according to the project's specifications.



- a. Describe what would happen if Tom uses the CROP command with the current selection.
- _____
- _____ (1)
- b. Tom decided to change the brightness and the contrast of the image. Describe in short how **each** of these functions affects the image.
- _____
- _____
- _____ (2)
- c. List **ONE** tool that Tom could use to remove all colour information from the photo and turn it into a greyscale image.
- _____
- _____ (1)
- d. When re-framing the image according to the selection, Tom realised that the image composition changed drastically. Indicate which version you prefer (full or cropped) and explain why.
- _____
- _____
- _____
- _____ (4)

Sera redesigned the plan of a small farmhouse as seen below. The plan was created using a CAD software and it includes a main entrance, two bedrooms, a kitchen, a bathroom and a small courtyard.

- e. Construct on the plan using the appropriate symbols; the main door, the missing window and the archway. (3)



- f. Sera created all the designs in the model space, but then set up a layout space to print a floor plan. Explain the difference between model space and layout space in a CAD software.
- _____
- _____ (2)
- g. Once she was happy with the design, Sera realised that many features from the ground floor can be replicated on the second floor. State the command and explain how it can be used.
- _____
- _____ (2)

(Total: 15 marks)