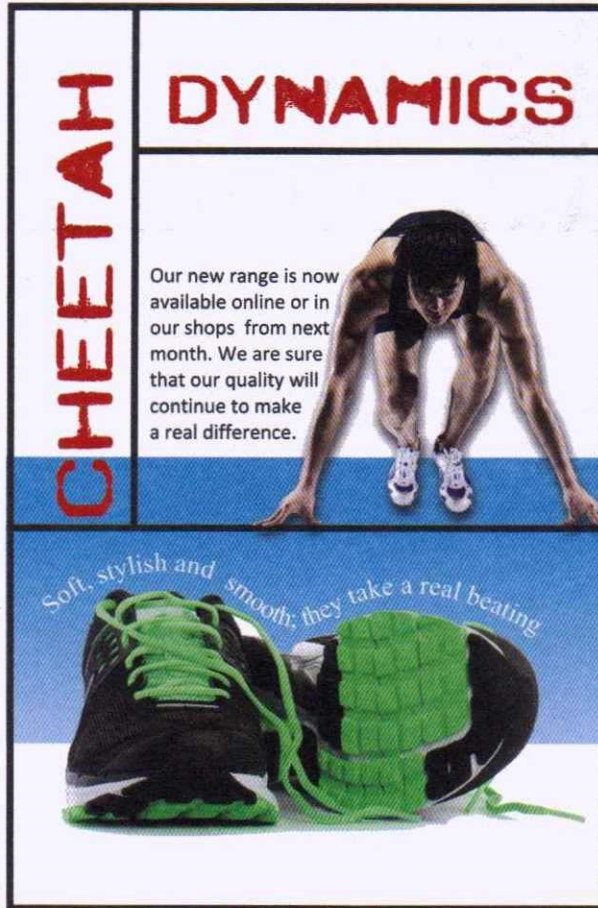


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1. Cheetah Dynamics, a sports equipment company, is marketing a new range of sports shoes. The mini-ad they have produced will be used in sports magazines. The colours in the layout were chosen carefully. The red company name stands out well.



- (a) State why using the colour red helps the company name to stand out against the blue and white background. 1

The designer wanted to create unity by making connections between different items in the layout.

- (b) State the DTP feature that allows the body text to follow the shape of the sprinter. 1

When line is used in a layout it can have several functions.

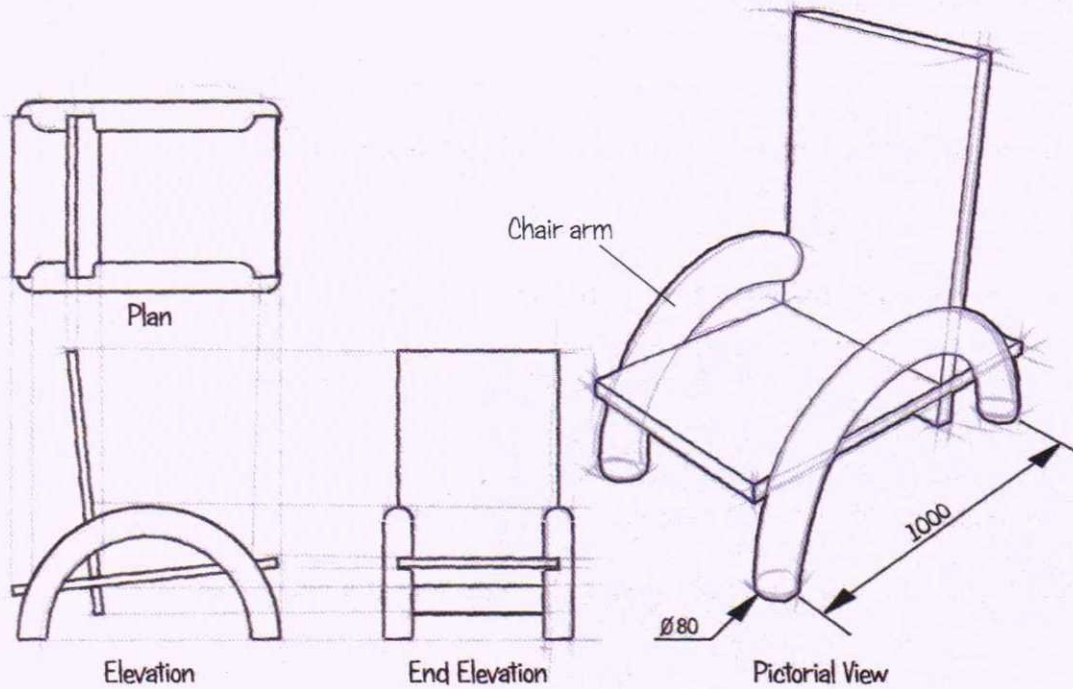
- (c) Explain the function of the lines in this layout. 1

1. (continued)	MARKS	DO NOT WRITE IN THIS MARGIN
(d) State the name of the DTP feature that produced the waves in the slogan above the sports shoes.	1	
(e) State the name of the other DTP feature used on the wavy text.	1	
(f) Explain how shaping the wavy text in this way improves the layout.	1	
The blue background colour fill was created by the designer. (g) State the name of the fill effect used in the blue background.	1	
Total marks	7	

MARKS

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2. A furniture designer has created some preliminary sketches for a new chair. These sketches were given to a CAD technician who will make a 3D CAD model.



The CAD technician used the revolve command to model the arms of the chair.

- (a) Describe, using the correct dimensions and 3D CAD modelling terms, how you would use 3D CAD software to model one arm of the chair. Do not model the slots in the arm. You may use sketches to support your answer.

3

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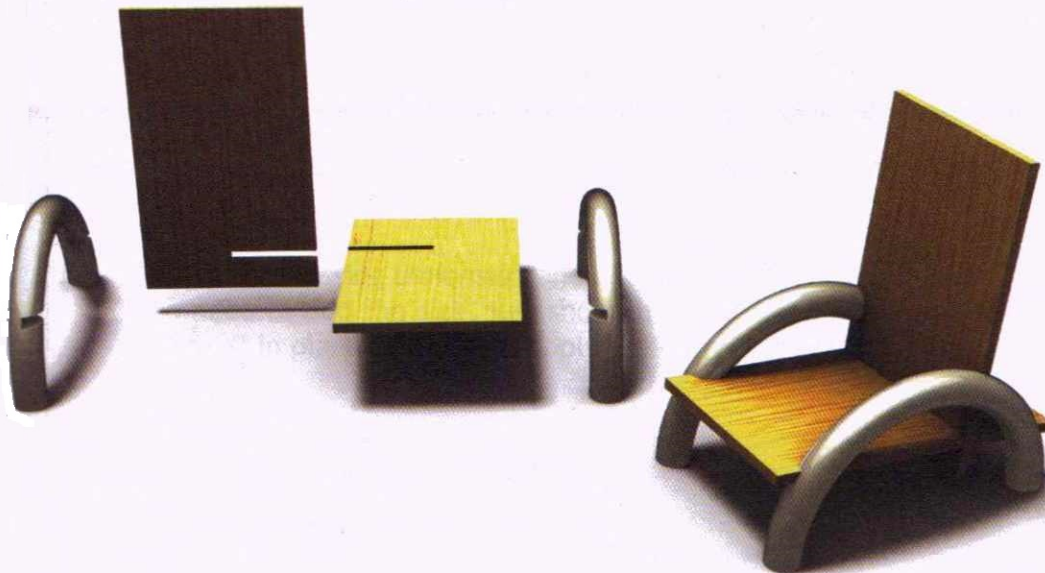


2. (continued)

The chair requires two arms – one for the left and one for the right. The CAD technician modelled the left-hand arm first.

(b) Describe how the CAD technician can make an identical right-hand arm without starting a new model.

2



The chair has four parts, made from three components:

- the left-hand arm
- the right-hand arm
- the seat/back component (used twice).

(continued overleaf)

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2. (continued)

- (c) Describe the CAD constraints used to make a CAD assembly of the four parts. Use sketches to illustrate your answer.

4

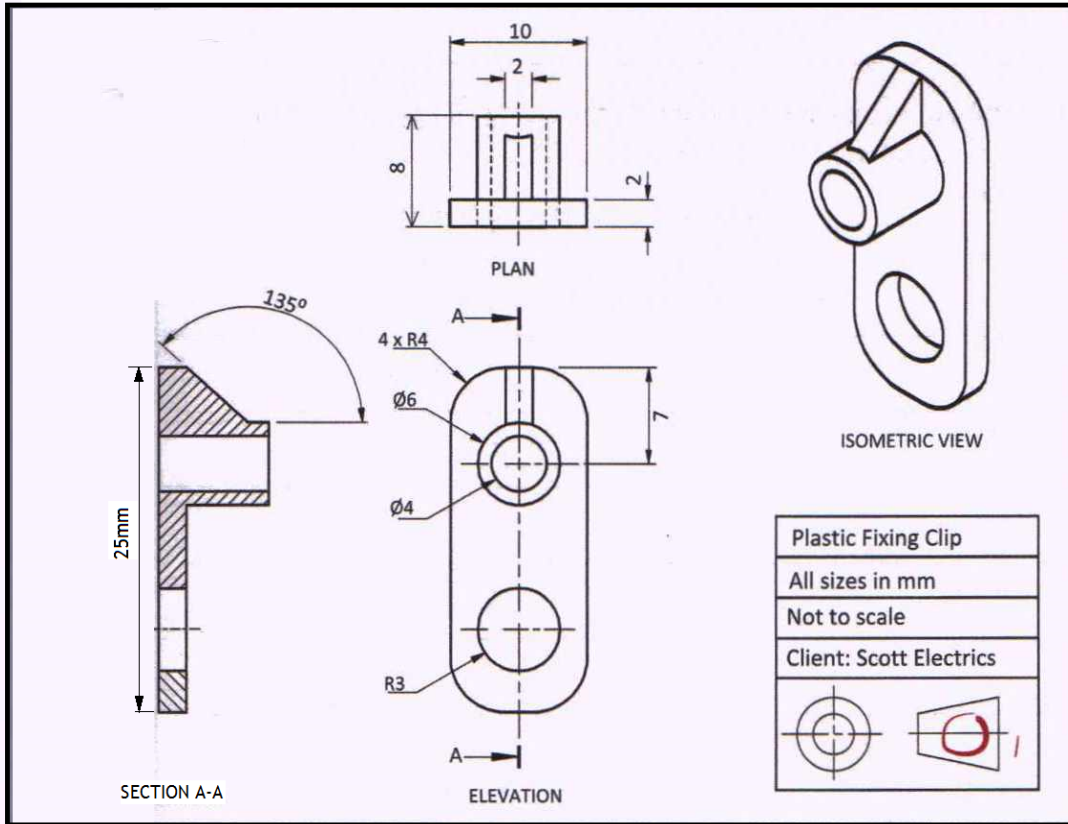
Total marks 9

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3. CAD production drawings for the manufacture of a plastic fixing clip are shown below.

The drawings were to be produced in accordance with British Standards conventions but they are not correct.



To enable the manufacture of the clip, the production drawings require one more dimension, dimension 'X'.

- (a) Identify this missing dimension and add it to an orthographic view. There is no need to add the size, just show the leader and dimension lines and put an 'X' in place of the size. Apply the correct drawing standards.

2

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3. (continued)

- (b) Identify eight British Standards drawing **errors** or **omissions** on the orthographic production drawings on *Page seven*. Circle and number each error on the drawing and describe each error in the table below. An example has been given.

8

Table of British Standards errors and omissions in the fixing clip production drawing	
Your numbered error or omission	Description of error or omission
1	This should be a centre line, not a solid line.

The clip drawings were produced using 3D CAD modelling software. The plastic clip will be used inside a flatscreen TV which is being designed and assembled in Scotland.

All of the components are made in a factory in China before being shipped over to Scotland.

- (c) Describe two ways in which **CAD models** and **drawing standards** can make this **international work** easier.

CAD Models:

1

Drawing Standards:

1

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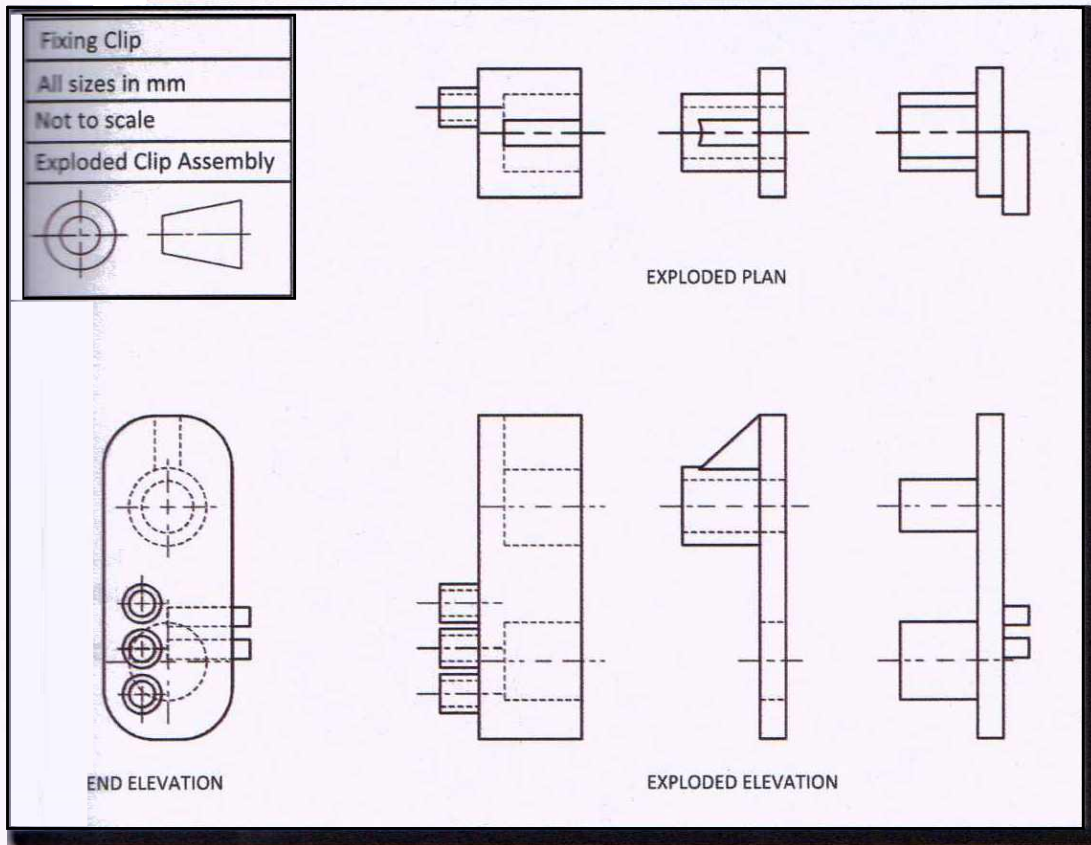
3. (Continued)

The company is always trying to improve component design. To help their designers they are transferring all of their drawings and design work from manual drawing boards to 3D CAD models.

(d) Explain two ways in which this change will benefit the designer.

2

The plastic clip is assembled with two other components. The drawings below show the orthographic exploded views of all three components.



(continued overleaf)

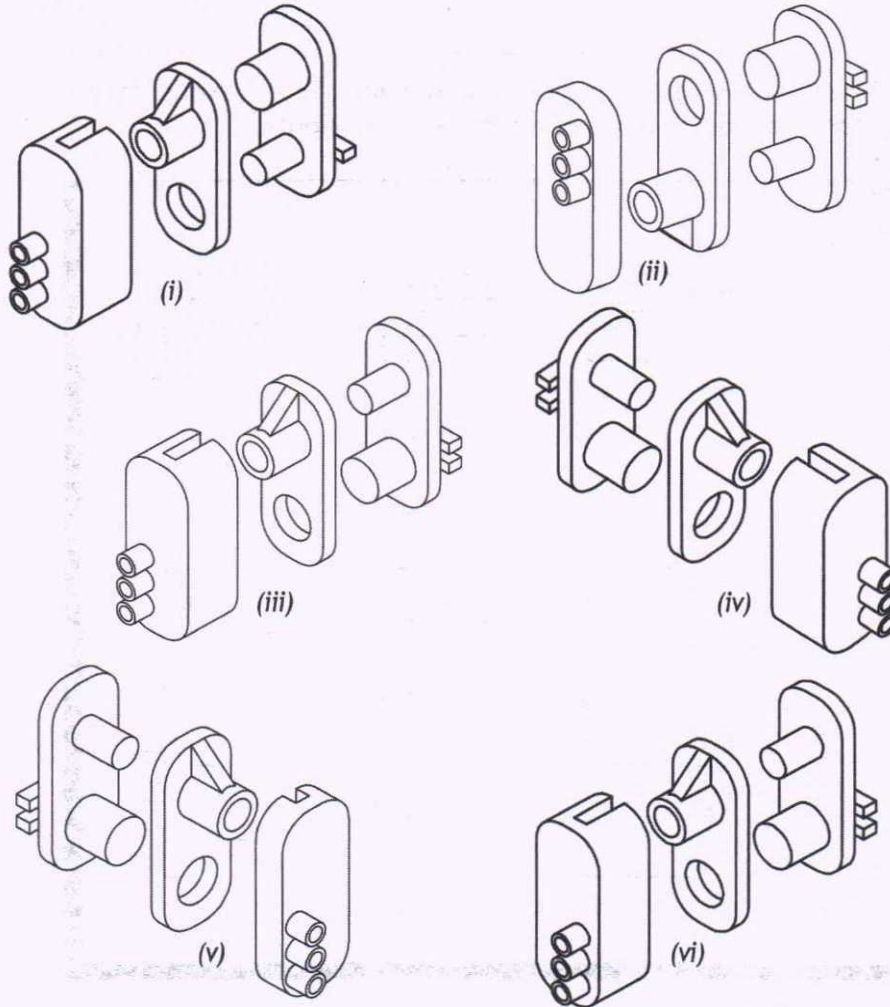
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3. (continued)

The exploded pictorial drawings below represent the clip assembly.
Five of them are incorrect and one is correct.

(e) Identify the exploded pictorial view that matches the clip assembly on the previous page.



Exploded pictorial view _____ matches the clip assembly on the previous page.

1

Total marks 15

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4. A hospital has employed a graphic designer to improve the layout of signs and notices for patients.

The original sign and the improved sign are shown below.

<i>Department</i>	<i>Floor</i>
<i>Oncology</i>	<i>2</i>
<i>Radiology</i>	<i>1</i>
<i>Ward 3</i>	<i>5</i>
<i>Diagnostics</i>	<i>4</i>
<i>Paediatrics</i>	<i>3</i>
<i>Ward 2</i>	<i>5</i>
<i>X-Ray</i>	<i>4</i>
<i>Ward 1</i>	<i>2</i>

Original sign

Department	Floor
Radiology	1
Ward 1 Oncology	2
Paediatrics You are here	3
Diagnostics X-Ray	4
Ward 2 Ward 3	5

Improved sign

Colour was an important consideration when designing the improved sign.

- (a) Explain how the new colours improved the sign. 2

A survey of patients and visitors preferred the choice of typeface (font) in the improved sign.

- (b) Suggest a reason why the new typeface was preferred. 1

Visitors felt that it was easier and quicker to understand the improved sign.

- (c) Identify two layout features, excluding typeface, that make the improved sign quicker to understand. 2

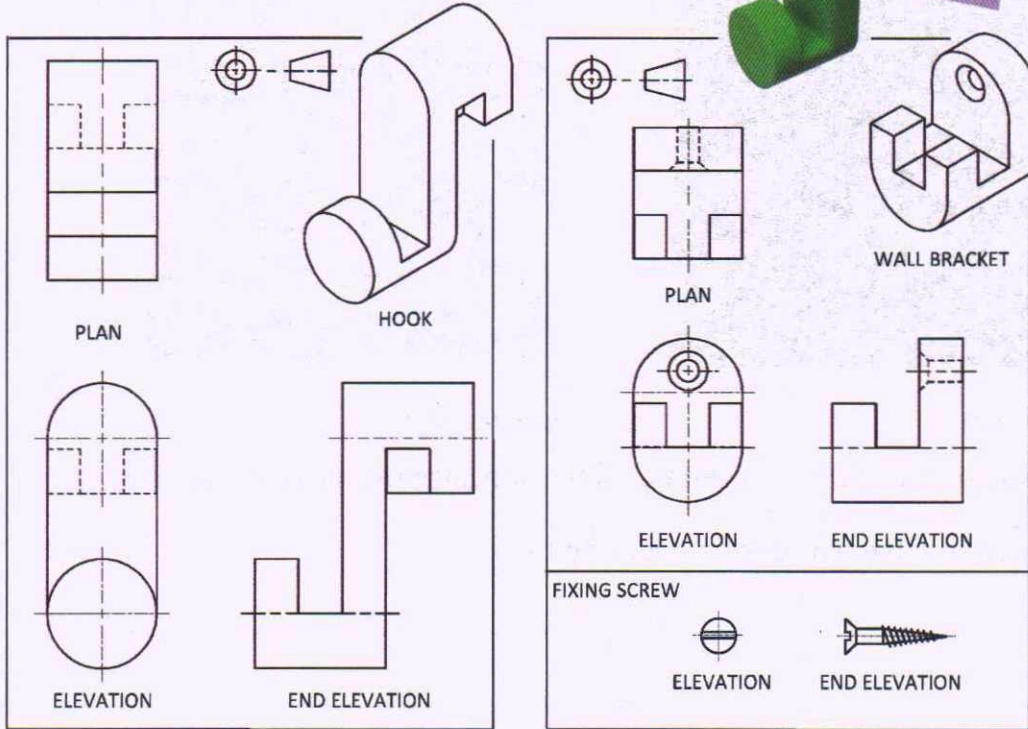
Total marks 5

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5. A range of production drawings for a domestic wall hook are shown. The hook comprises two components, the hook and the wall bracket, plus a standard component fixing screw.

Study the drawings and answer the questions.



- (a) State which of the two isometric exploded views is **incorrectly** exploded.

Isometric exploded view ____ is incorrectly exploded.

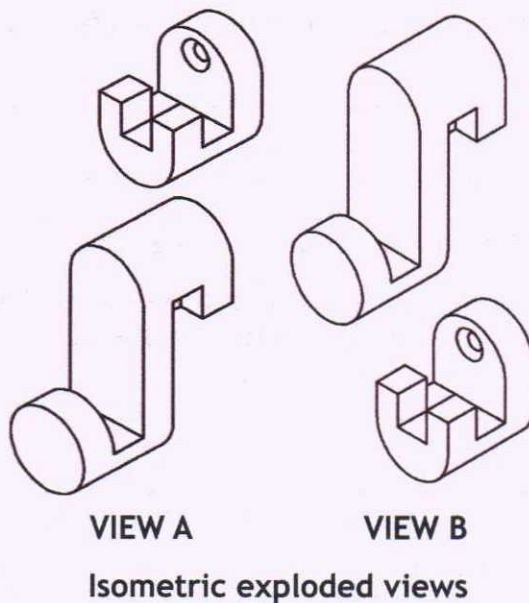
1

- (b) Explain why this view is **incorrectly** exploded.

1

The fixing screw is missing from the exploded views.

- (c) Indicate the position and direction of the fixing screw on the correctly exploded isometric view.

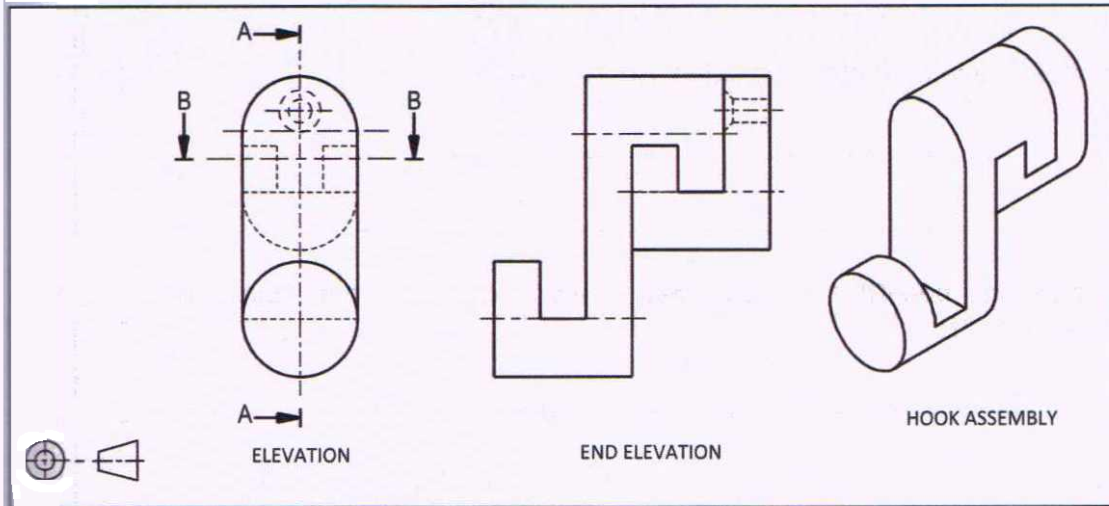


1

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5. (continued)

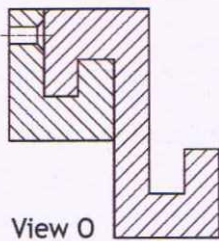
Wall hook assembly drawings



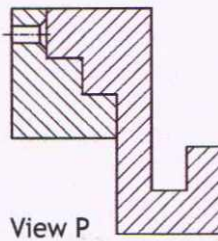
(d) Identify the sectional view below that matches section A-A above.

Section A-A is view _____.

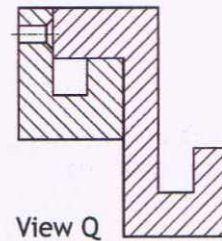
1



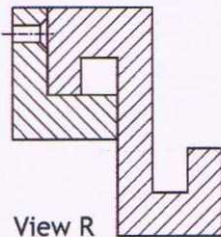
View O



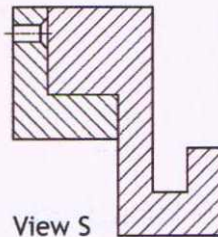
View P



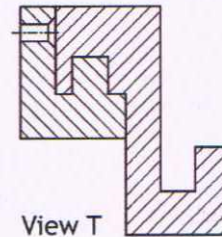
View Q



View R



View S

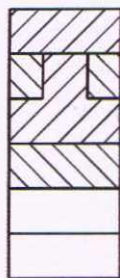


View T

(e) Identify the sectional plan view below that matches section B-B above.

Section B-B is view _____.

1



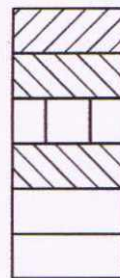
View U



View V



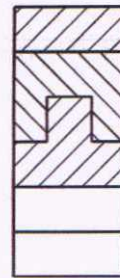
View W



View X



View Y



View Z

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5. (continued)

Exploded views and sectional views are commonly used in production drawings.

- (f) Describe one benefit that **exploded views** provide. 1

- (g) Describe one benefit that **sectional views** provide. Do not repeat an answer from (f). 1

In sectional drawings there are features that should not be sectioned or cross-hatched.

- (h) Name one common feature or component that should **not** be sectioned. 1

Production drawings can be shown in two main types: assembly drawings and component drawings.

- (i) Describe the difference between assembly drawings and component drawings. 1

Component drawings are dimensioned to support manufacture.

- (j) State why dimensions are added to component drawings and not to assembly drawings. 1

Total marks 10

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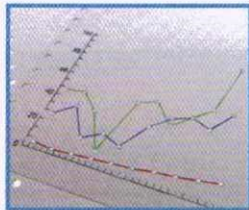
6. The four main types of information graphs and charts are shown below.



Pie chart



Bar graph



Line graph

Average Holiday Prices (in £)			
	Britain	Europe	America
Spring	1800	1900	2100
Summer	2200	2000	2400
Autumn	1700	1800	1900
Winter	1350	1300	1650

Table

Two different sets of statistics are shown below.

Each of the statistics can be made more visual by creating an information graph or chart to display the figures.

Statistics A

Annual ice cream sales

January	950 ltr
February	800 ltr
March	1250 ltr
April	3100 ltr
May	2750 ltr
June	4500 ltr
July	5600 ltr
August	6200 ltr
September	4210 ltr
October	1220 ltr
November	1000 ltr
December	1400 ltr

Statistics B

Road bike technical data

Model

Roadster	Wheel size 590cm	Frame size 147cm
	Gears 9	Weight 13kg
Flyer	Wheel size 602cm	Frame size 152cm
	Gears 12	Weight 12kg
Kingfisher	Wheel size 600cm	Frame size 155cm
	Gears 9	Weight 14kg
Draper	Wheel size 588cm	Frame size 148cm
	Gears 8	Weight 14kg
XRB	Wheel size 640cm	Frame size 160cm
	Gears 10	Weight 12kg
Speedster	Wheel size 580cm	Frame size 154cm
	Gears 9	Weight 15kg

(a) State the best type of information graphic to show the trends over the year in **Statistics A**. 1

(b) Explain why this is the best type of graph or chart to display **Statistics A**. 1

(c) State the best type of information graphic to display the data in **Statistics B**. 1

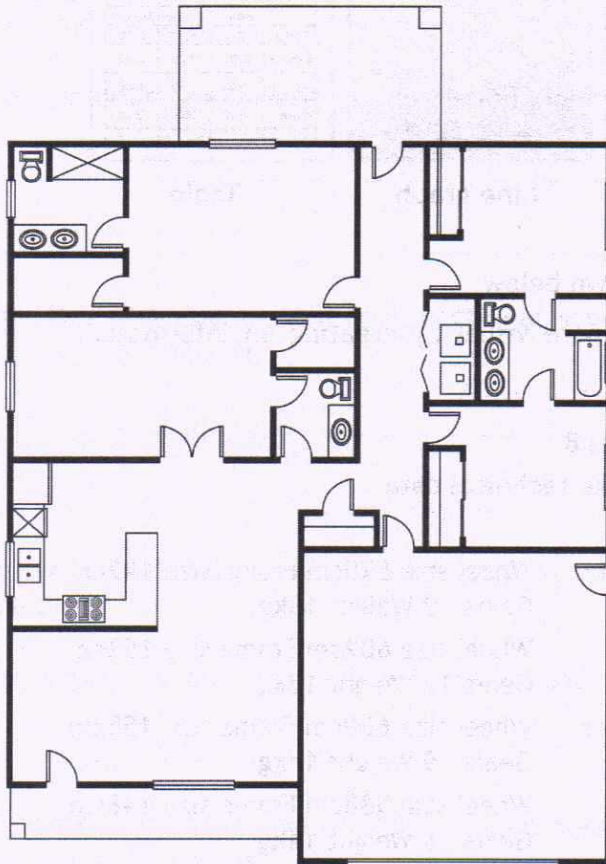
(d) Explain why this is the best type of graph or chart to display **Statistics B**. 1

Total marks **4**

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7. An architecture company makes use of preliminary, production and promotional graphics.



FLOOR PLAN v1.0	
HOUSE NAME:	THE ROCKWELL
SCALE:	
UNITS ARE IN M	
IF IN DOUBT, ASK!	
DRAWN BY:	CLARE HALLIDAY
APPROVED BY:	JOE MASON
DATE:	8 TH JULY

To enable the builder to start constructing the house, more information needs to be added to the floor plan.

- (a) State three key items of information missing from the floor plan.

3

- (b) Add the symbol for a radiator to any one of the rooms.

1

Total marks 4

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8. A poster designed by a graphic artist to encourage young people to consider university courses is shown.



- (a) Describe how the graphic artist created unity in the layout. 1

- (b) Describe how the graphic artist created depth in the layout. 1

The graphic artist worked hard to design an organised layout. This was achieved by using alignment.

- (c) Describe where alignment occurs in the layout. 1

The designer used colour to create contrast in the layout.

- (d) Describe one other way in which contrast has been created in this layout. 1

The layout is to be used on the side of double-decker buses in towns around the country.

- (e) Explain why contrast is important in a promotional layout like this one. 1

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8. (CONTINUED)

- (f) Choose the most dominant item in the layout and explain how the designer made it the most dominant item.

1

The most dominant item is _____

The designer created dominance by _____

Total marks 6

[END OF MODEL QUESTION PAPER]