



Graphic Communication

Date – December 2013

Duration – 1 hour and 30 minutes

Fill in these boxes and read what is printed below.

Name

Form Class

Teacher

Class Set

Total marks - 60

Attempt ALL questions.

All dimensions in mm.

All technical sketches use 3rd angle projection.

You may use rulers, compasses or trammels for measuring.

Read every question carefully before you attempt it.

Write your answers clearly in the spaces provided, using **blue** or **black** ink.

Before leaving the examination room you must give your answer booklet to the Invigilator.
If you do not, you may lose all the marks for this paper.

1. A graphic designer has produced three promotional layouts.

(a)

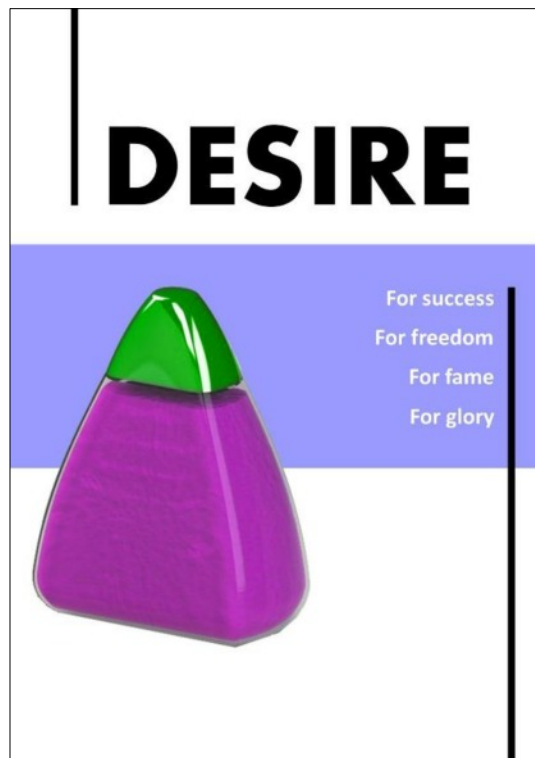
(i) State one instance where alignment has been used in Layout 1. **(1 mark)**

(ii) Describe the effect that alignment has on Layout 1. **(1 mark)**

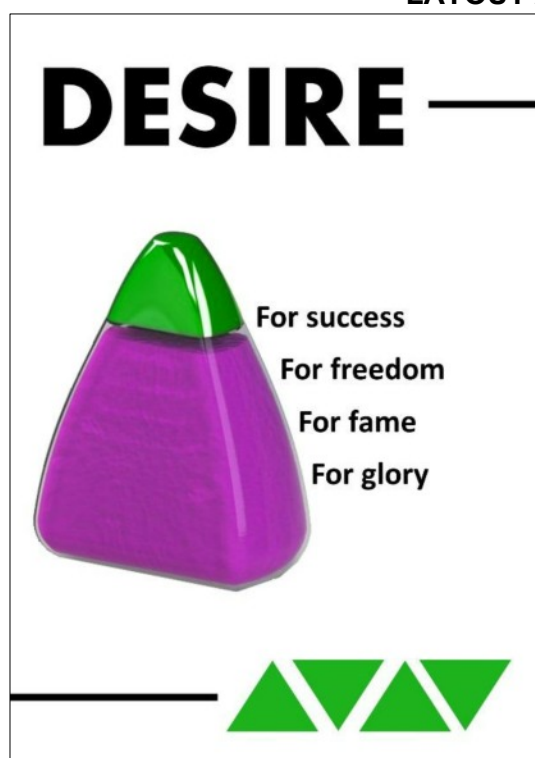
(b)

Describe two ways in which the designer has created unity in Layout 2. **(2 marks)**

LAYOUT 1



LAYOUT 2

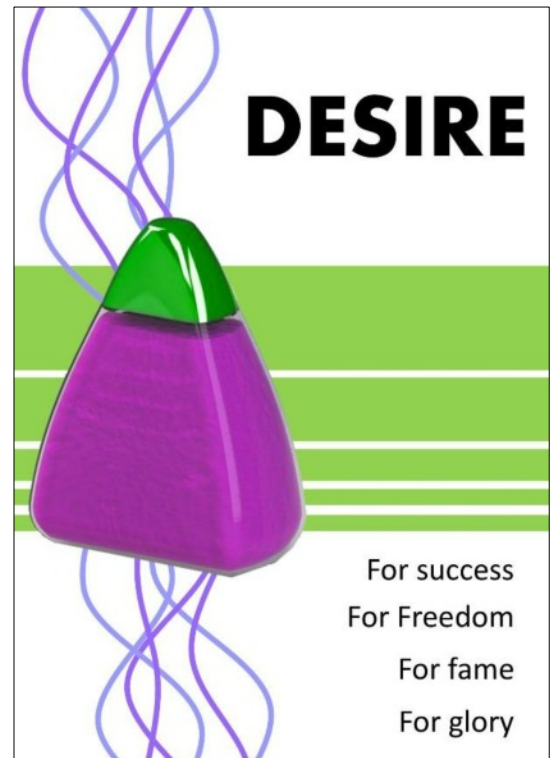


1. (continued)

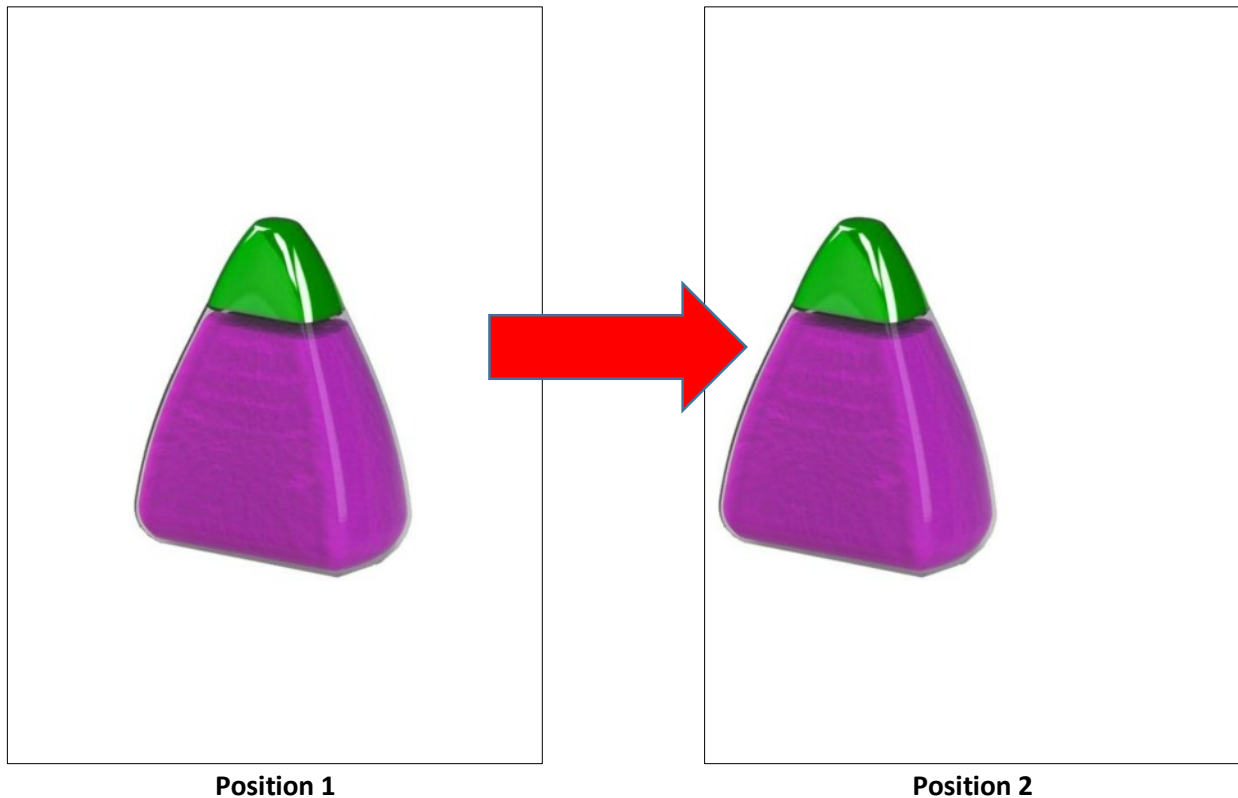
(c)

Describe two methods used to create contrast in Layout 3. (2 marks)

LAYOUT 3



Early in the design process, the designer decided it was important to move the bottle away from Position 1 to Position 2 as shown below. (1 mark)

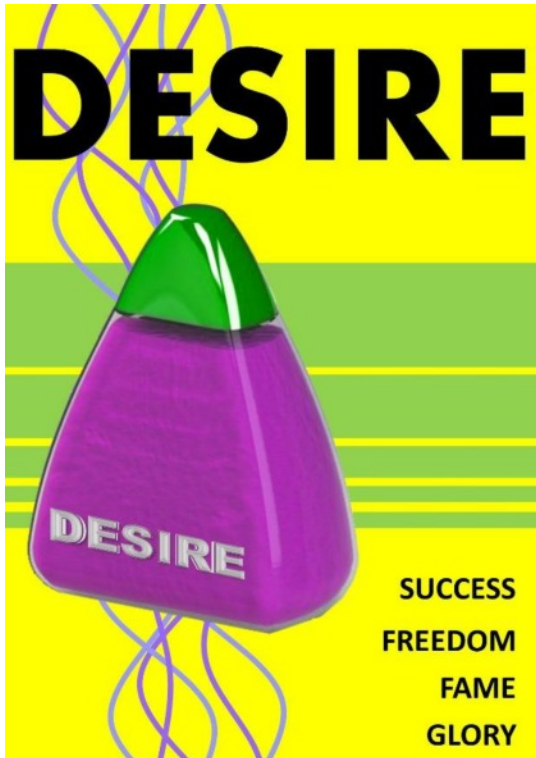


(d)

State one reason for doing this. (1 mark)

1. (continued)

In the final DTP layout shown below, the designer chose **yellow** for the background colour.



(e)

(i) State whether yellow is an advancing or receding colour. (1 mark)

(ii) Describe the effect that the yellow background colour has on the bottle. (1 mark)

The colours used on the bottle itself are shades of purple and green. The designer wishes to create a more **harmonious** colour scheme on the bottle and decides to change the red shade to another colour.

(f) State a **tertiary** colour the designer should try instead of red. (1 mark)

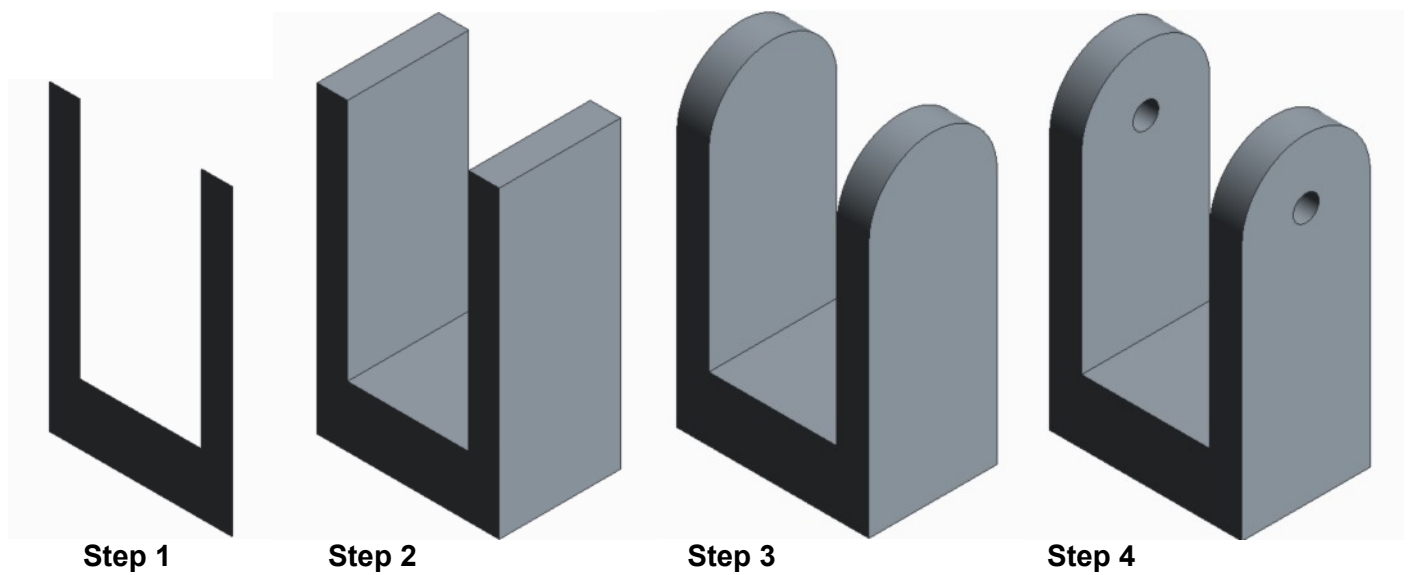
The 'DESIRE' promotion will be published in a magazine and caring for the environment is important to the magazine publisher.

(g) State **two** ways in which the publisher can reduce the magazine's impact on the environment. (2 marks)

Using DTP software to produce a magazine brings many benefits to the publishing industry and its workforce.

(h) State **one** benefit that DTP has brought to the publishing industry (other than environmental benefits). (1 mark)

2. A bracket is designed to hold a pulley wheel used to hoist sails on ships. The preliminary sketch is shown on the next page. 3D modelling software was used to create a 3D model of the bracket.
- The **profile** shown in Step 1 was drawn using CAD software using the sizes on the preliminary sketch. The “extrude” command is used to make the profile from Step 1 into the 3D model shown in Step 2.



(a) State the size of the extrusion used at Step 2. (1 mark) _____

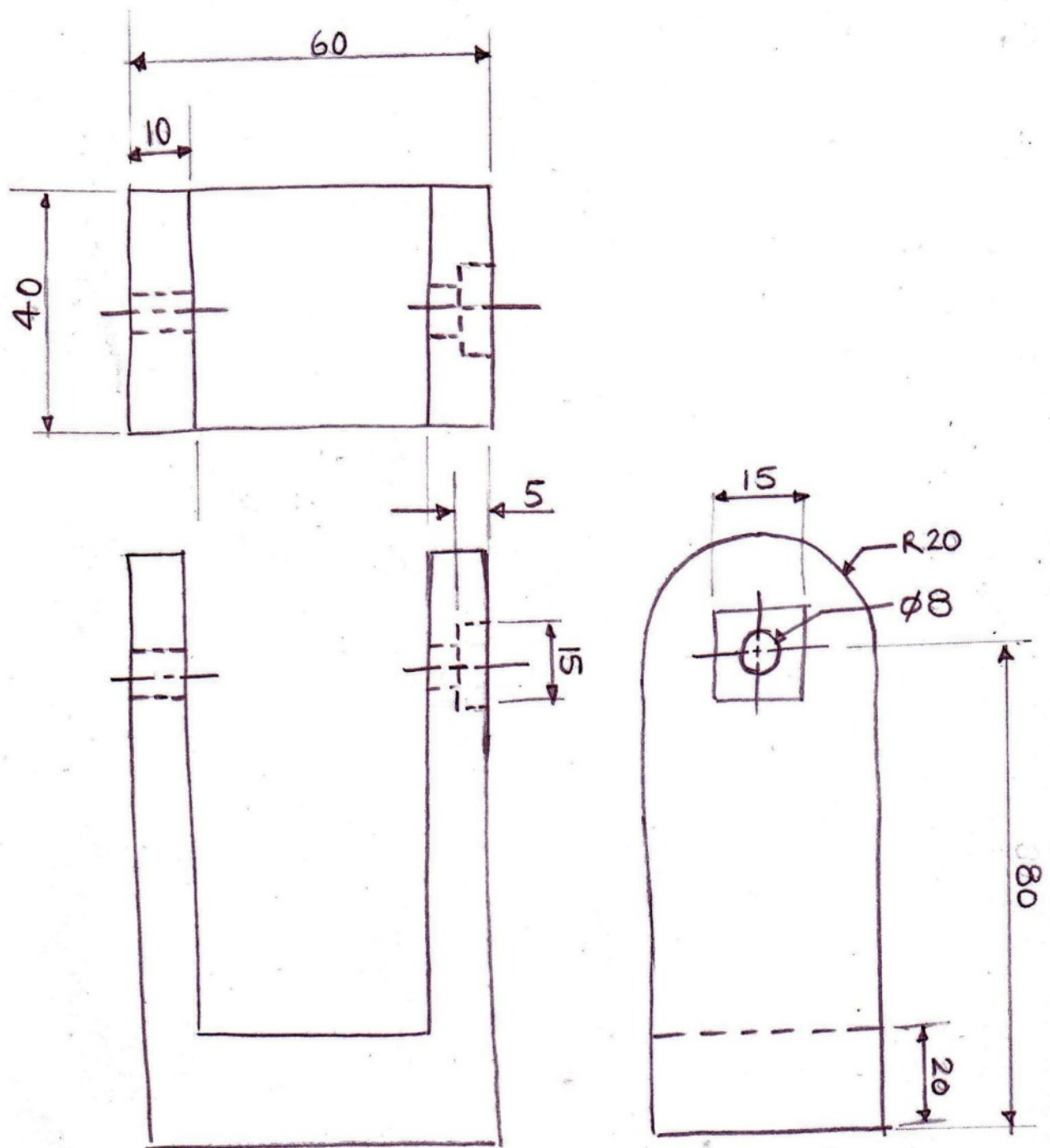
The **completed** 3D model is shown in Step 4.

(b) Describe, **with reference to correct dimensions and 3D CAD modelling terms**, how you would use 3D modelling software to complete the model from Step 3 to Step 4.

You may use sketches to support your answer.

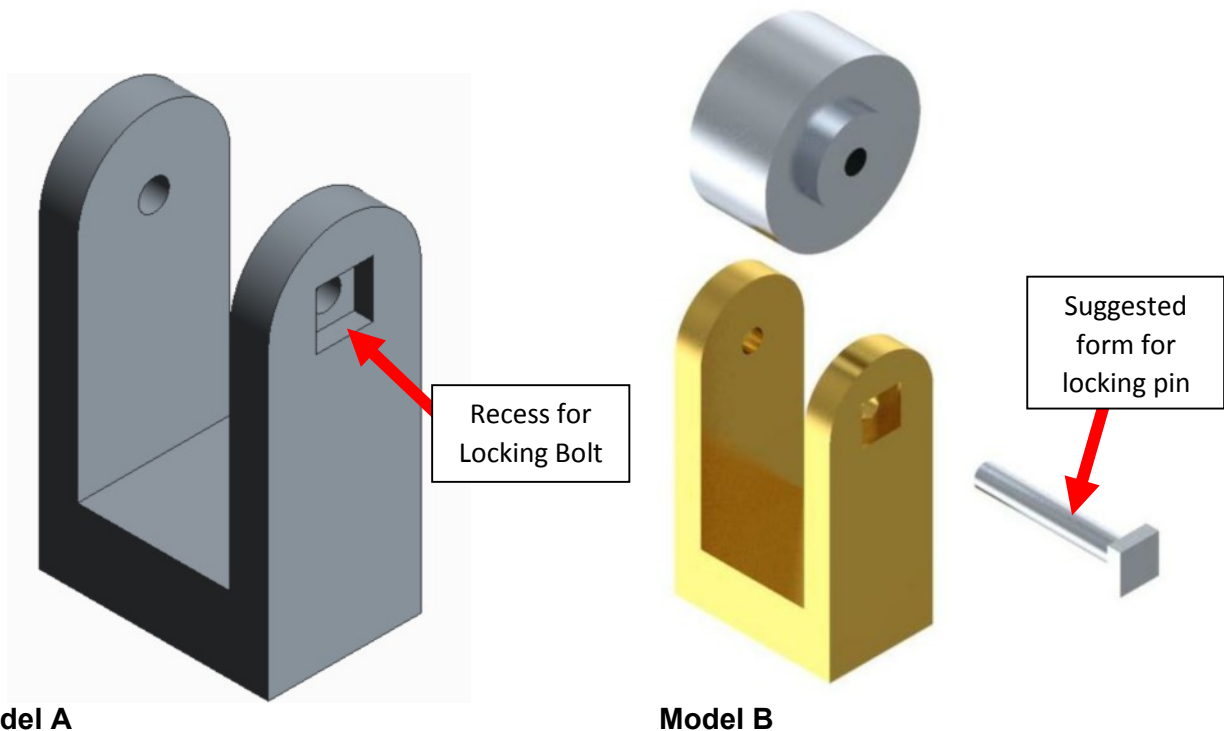
(3 marks)

2. (continued) - Preliminary sketch of bracket:



2. (continued)

In **Model A** below, a recess has been added to one side of the bracket to allow a locking pin to hold the pulley in place.



An exploded view of the **completed** pulley assembly is shown in **Model B** above. A pin is needed to secure the pulley to the bracket. The pin **must not** fall through the bracket.

(c) Describe **with reference to dimensions** and **CAD modelling terms**, how to produce a 3D CAD model of a pin that will secure the belt to the bracket.

You must make reference to the **dimensions** on the **preliminary sketch**. A suggested form for the pin is shown above in **Model B**.

You may use sketches to support your answer.
(4 marks)

2. (continued)

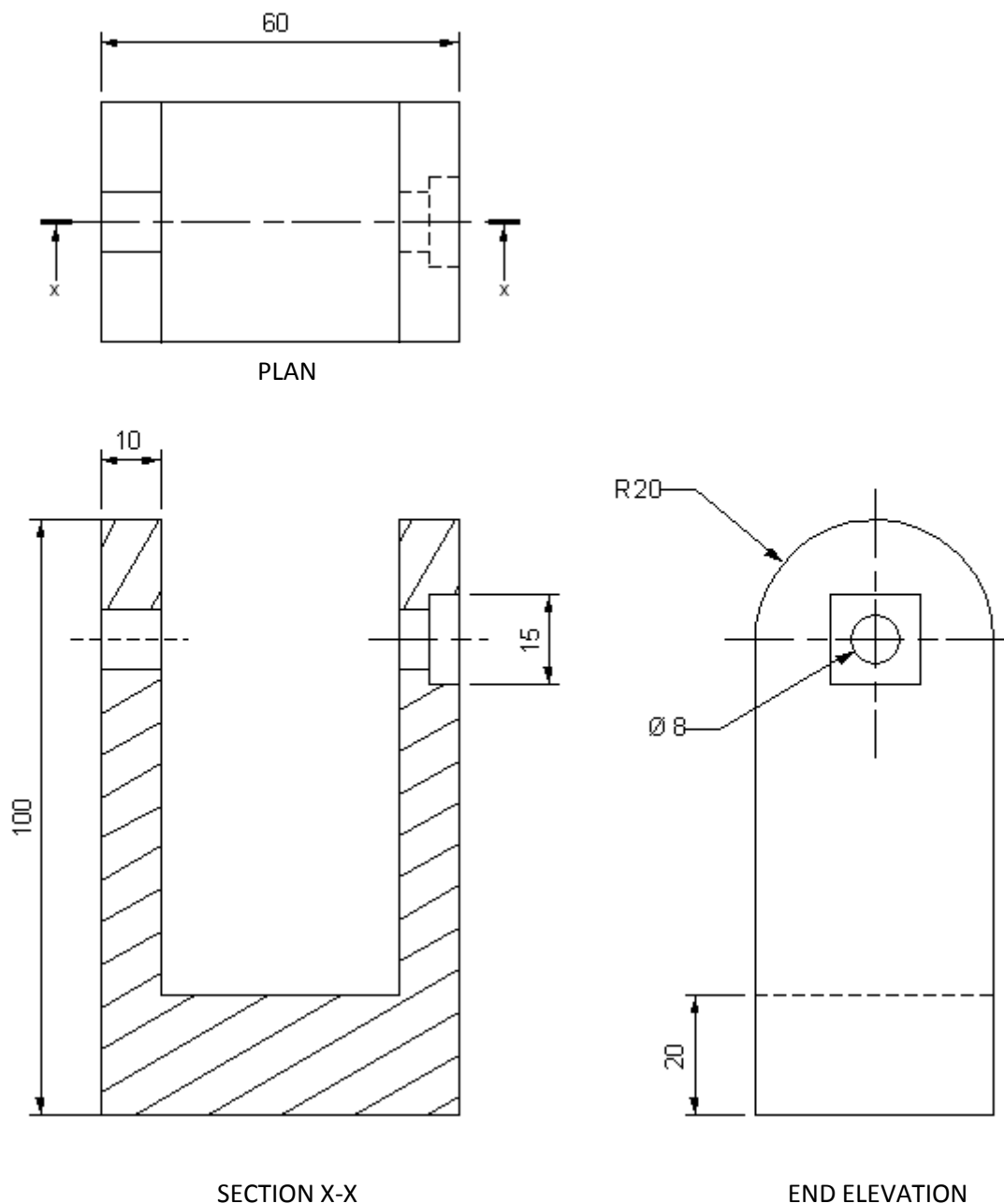
In **Model A** below, a recess has been added to one side of the bracket to allow a locking pin to hold the pulley in place.

An orthographic production drawing is produced from the 3D CAD model as shown below.

There are errors in the drawing.

- (d) State **three** errors in the production drawing. **(3 marks)**
You may annotate the drawing to support your answer.

- (i) _____
- (ii) _____
- (ii) _____

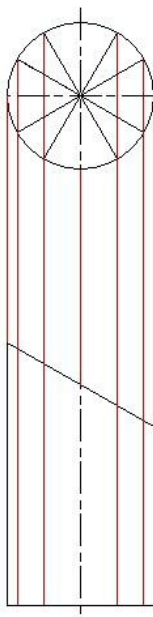
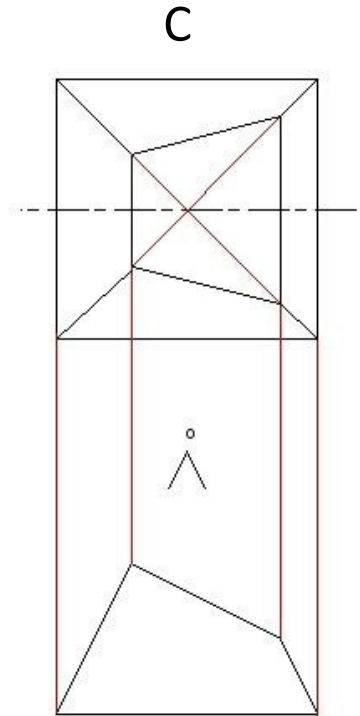
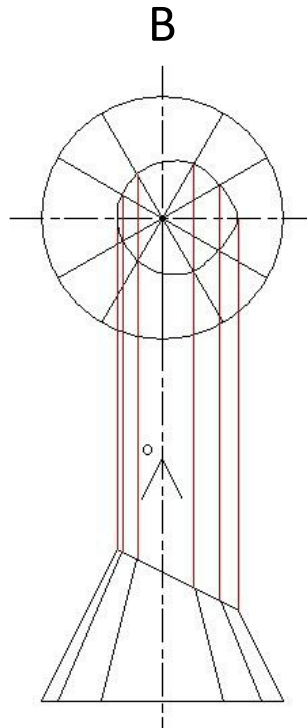
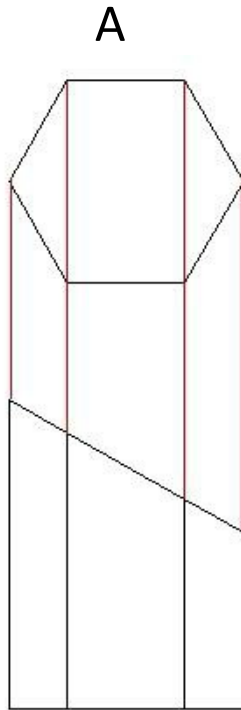


Orthographic Production Drawing of a Bracket

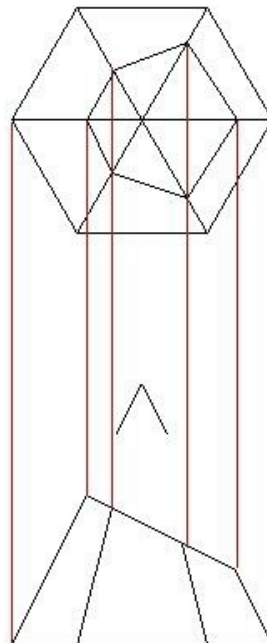
3. Six cut geometric forms are shown as orthographic views. Options for true shapes are given opposite and contain **only six** correct true shapes which match the cut geometric forms.

Place the number of the matching true shape in the box under each cut geometric form in the orthographic views. **(6 marks)**

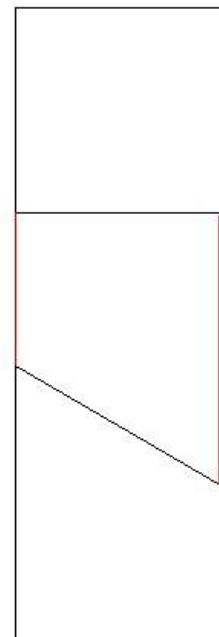
Geometric Forms shown as Orthographic Views



D



E



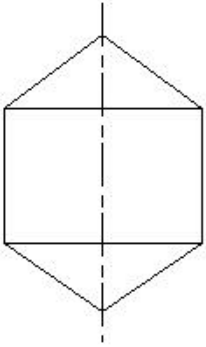
F



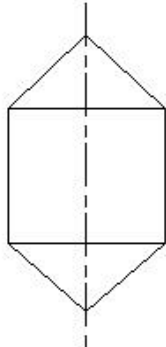
3. (continued)

True Shapes Options

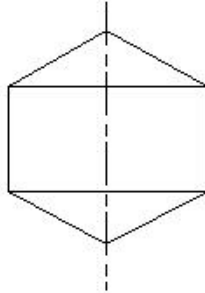
1



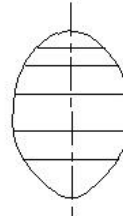
2



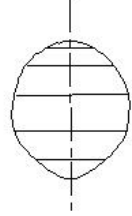
3



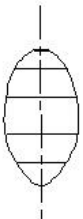
4



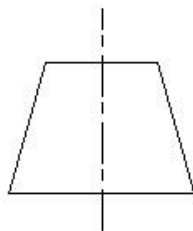
5



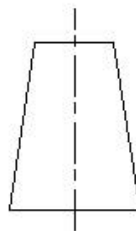
6



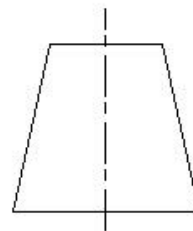
7



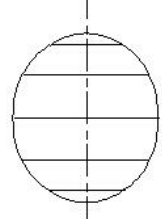
8



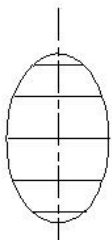
9



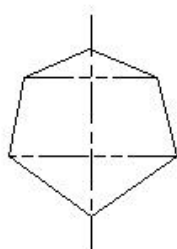
10



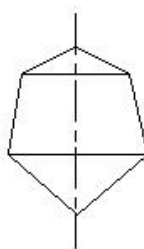
11



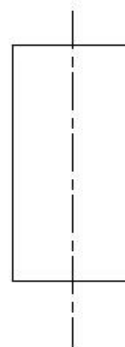
12



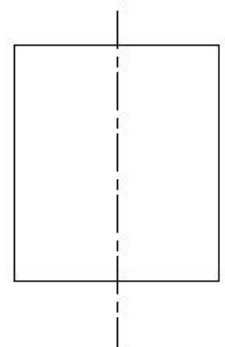
13



14



15



4. A company that makes skateboards is celebrating a successful year. They have excellent sales figures and want to use them to help promote their success.

A graphic designer has been asked to produce graphs or charts that make the sales figures more visual for use in promotional graphics. The sales figures are shown below.



Sales Figures A

Worldwide skateboard sales by percentage in 2012:

UK Sales	9%
European Sales	17%
USA Sales	33%
Asian Sales	27%
Australasian Sales	14%

Sales Figures B

Monthly skateboard sales in 2011:

<i>Month</i>	<i>Sales Made</i>
Jan	1450
Feb	900
Mar	1050
Apr	1800
May	1650
Jun	2400
Jul	3250
Aug	4100
Sep	1100
Oct	850
Nov	600
Dec	4300

(a) Based on Sales figures A:

- (i) state the best type of graph or chart to use when presenting Sales figures A information;
(1 mark)

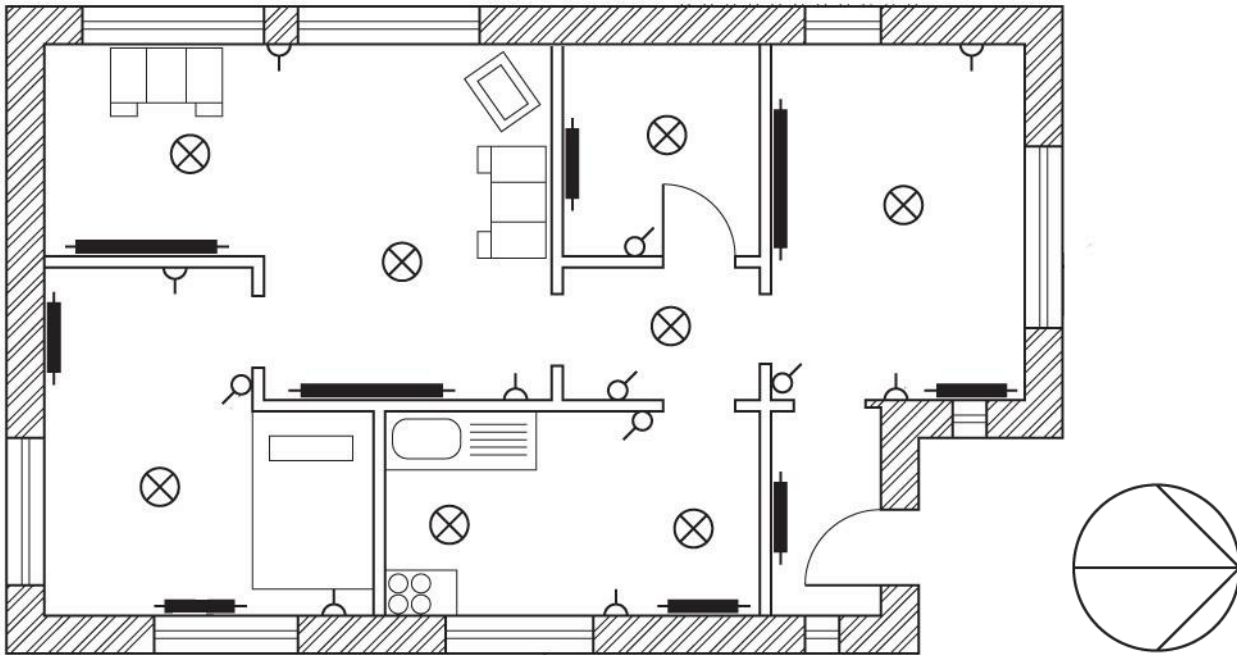
- (ii) state one reason for using this type of graph or chart. (1 mark)

(b) Based on Sales figures B:

- (i) state the best type of graph or chart to show the Sales figures B over the year;
(1 mark)

- (ii) state one reason for using this type of graph or chart. (1 mark)

5. (a) A floor plan with some electrical symbols is shown below:



(a) continued

(i) Identify, by placing an X in the box below the symbol, which symbol represents a light switch. **(1 mark)**


☐

☐

☐

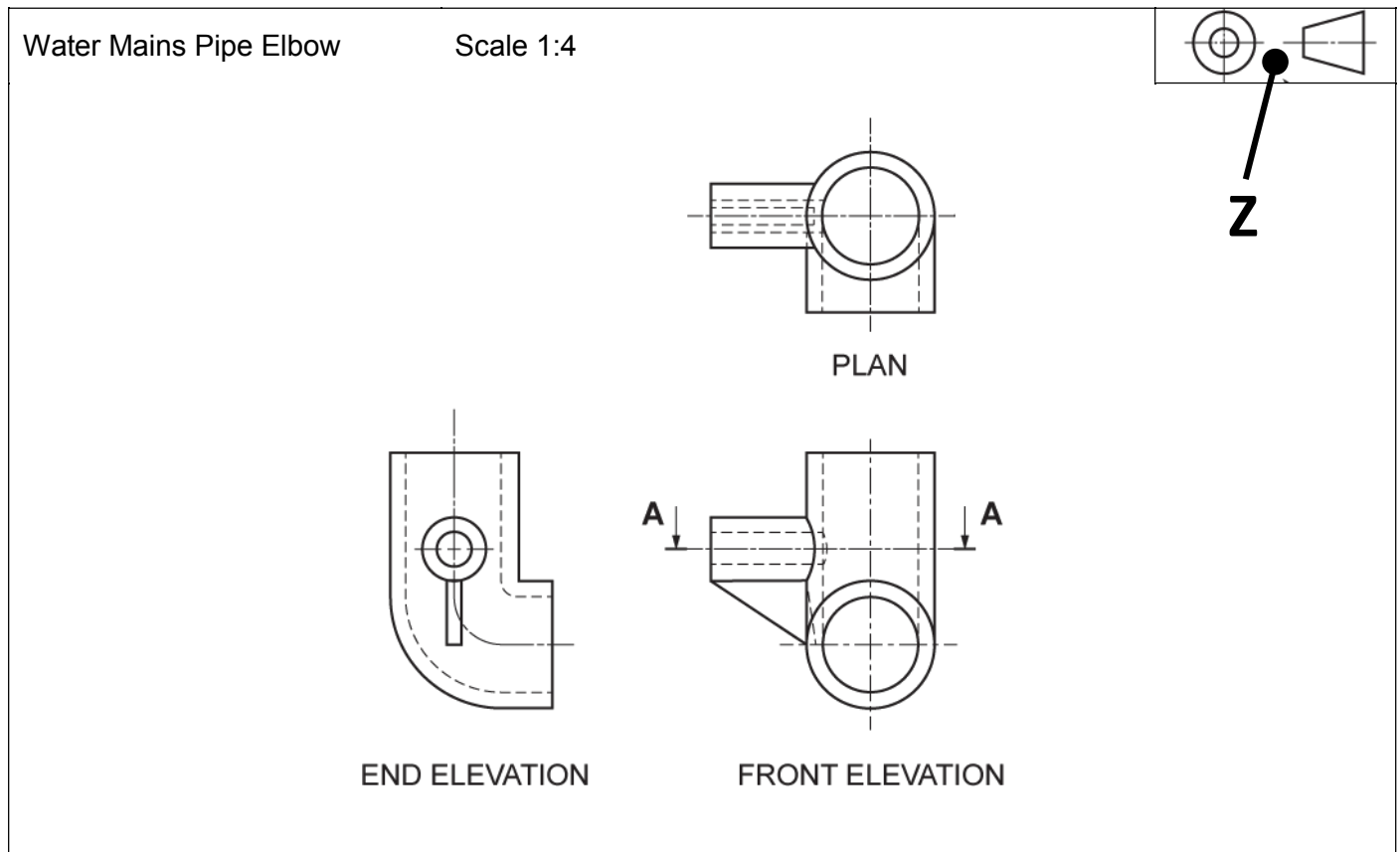
(ii) How many windows face east? **(1 mark)**

(b) All of the symbols shown above are stored in a CAD library.

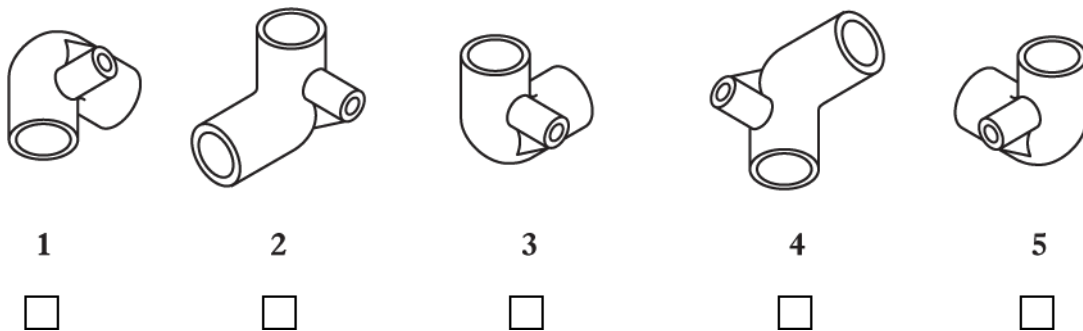
(i) State **one** advantage of using a CAD library. **(1 mark)**

(ii) State **one** advantage of using symbols in graphic communication. **(1 mark)**

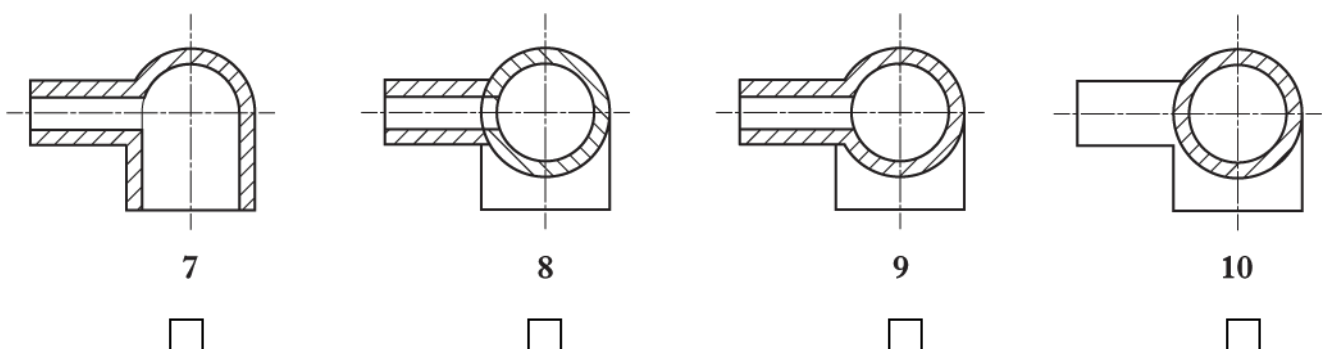
6. Orthographic CAD drawings for a mains water pipe elbow are shown below.



(a) Identify, by placing an X in the box below, which pictorial view matches the pipe elbow in the orthographic production drawings above: **(1 mark)**



(b) Identify, by placing an X in the box below, which sectional view matches the pipe elbow in the orthographic production drawings above: **(1 mark)**



6. (continued)

Dimensions are **not** normally added to orthographic **assembly** drawings.

(c) State the type of orthographic production drawings that will normally include dimensions. **(1 mark)**

Sectional drawings are shown on the previous page, as part of Q6 (b)

(d) State **one** benefit of using a sectional drawing in relation to this pipe elbow. **(1 mark)**

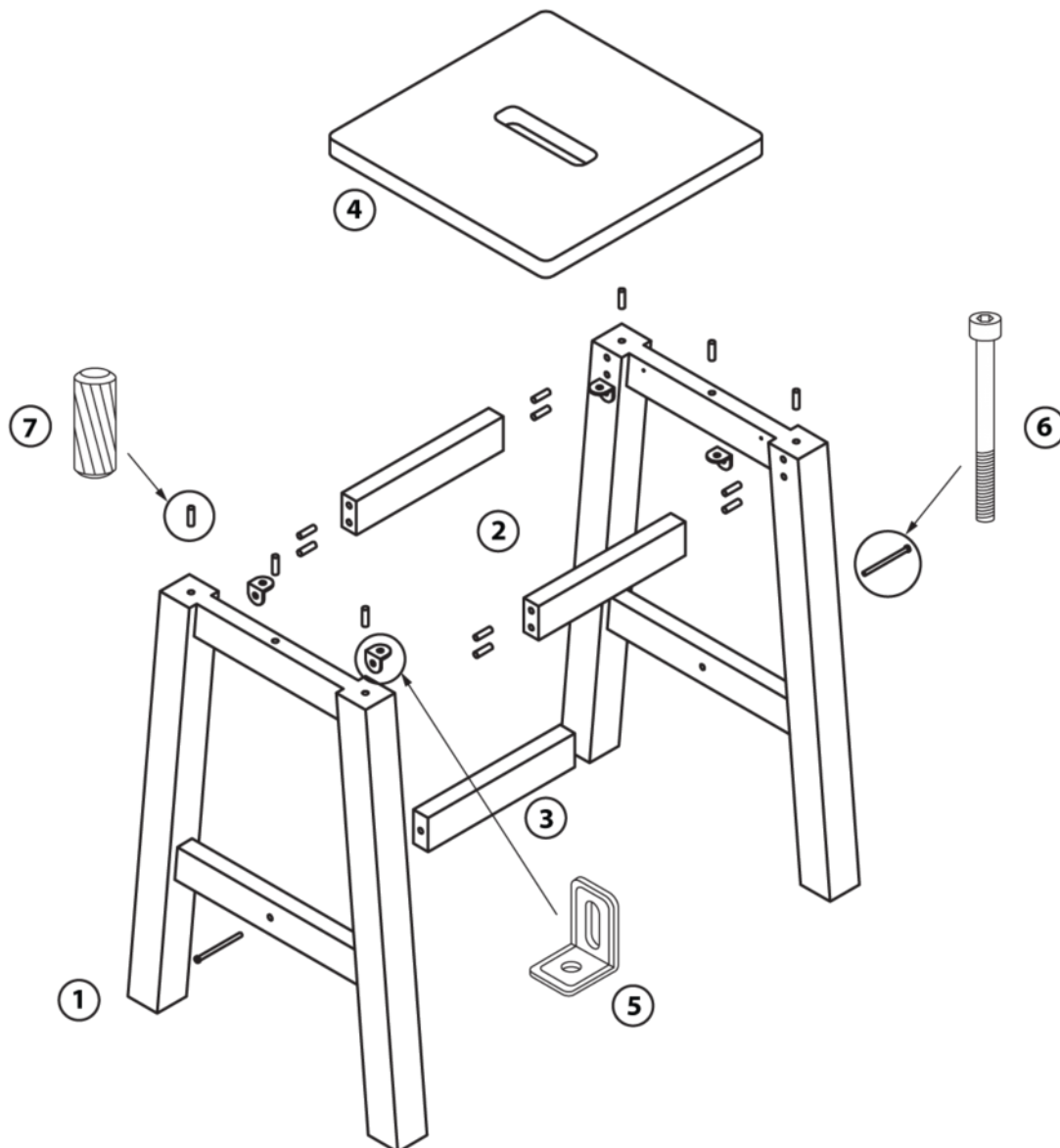
(e) Explain what scale 1:4 means. **(1 mark)**

(f) State the name of the symbol shown at **Z**. **(1 mark)**

(g) Describe the purpose of this symbol. **(1 mark)**

(h) State where on orthographic drawings, the information "All sizes in mm" would be found. **(1 mark)**

7. An exploded pictorial view and a parts list for a small flat pack stool are shown below:



ITEM NO.	PART NUMBER	NAME / DIMENSIONING	MATERIAL	NO. REQUIRED
1	111631	A-Frame 500 x 300 x 40mm	Pine	2
2	103404	Top Bar 200 x 40 x 20mm	Pine	2
3	103405	Centre Bar 220 x 40 20mm	Pine	1
4	102600	Stool Top 350 x 350 x 20mm	Pine	1
5	102646	Angled Bracket	Steel	4
6	101350	Bolt – M8 x 60mm	Steel	2
7	100159	Dowel Ø8 x 20mm	Ramin	14

(a) State the material of part 103404. (1mark)

(b) State the length of the Centre Bar. (1mark)

7. (continued)

(c) State how many Angled Brackets are required for the assembly. **(1mark)**

(d) State the diameter of part 101350. **(1mark)**

(e) State the part number for the A-Frame. **(1mark)**

(f) State how many 8mm dowels are required. **(1mark)**

8. A poster promoting “smartWATCH”, a new smart phone accessory for men, is shown on the facing page.

The text and the images used in the poster are laid out in their original form at the top of the page.

The final poster layout, (bottom of the page), promotes the smart watch.

The original graphics and text were edited in a DTP package before being placed in the final layout.

- (a) State the name of the DTP editing feature applied to each of the original items to get them ready for use in the final layout.

Do not include “**scaling** or **resizing**” in your answer.
Ensure you do not use the same answer twice.

- (i) **Photograph of the model**—state **one** DTP edit. **(1 mark)**

Edit _____

- (ii) **Product photo of smart watch** —state **one** DTP edit. **(1 mark)**

Edit _____

- (iii) **“smartWATCH” brand name**—state **one** DTP edit. **(1 mark)**

Edit _____

- (iv) **Background silhouette**—state **one** DTP edit (do not repeat a previous answer). **(1 mark)**

Edit _____

- (v) **Slogan** —state **one** DTP edit. **(1 mark)**

Edit _____

- (b) State **one** way in which the final layout of the slogan improves the promotional poster. **(1 mark)**

- (c) When setting up the layout the designer used the following DTP features: **Grid** and **Snap to grid**.

State **two** ways in which the use of **Grid** and **Snap to grid** benefit the graphic designer. **(2 marks)**

8. (continued)

Text and images used for final layout:

Product Photo

Product Name
smartWATCH

Box

Flashbar

Photo of Watch Model

Background Silhouette

Slogan
all your notifications...all
the time...wherever you
are!

Final layout:

smartWATCH

SONY

all your notifications...
all the time...
wherever you are!

[END OF PRELIM PAPER]