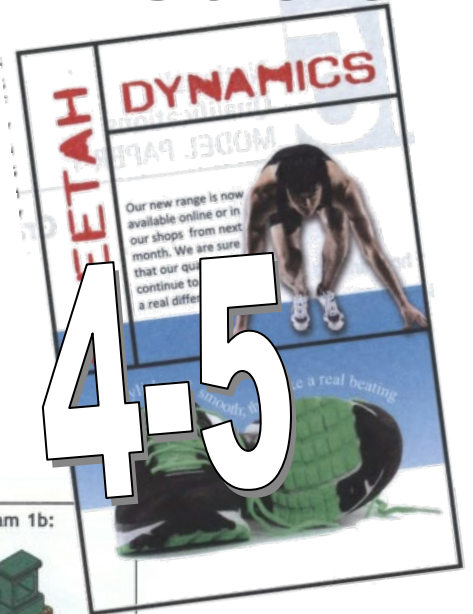


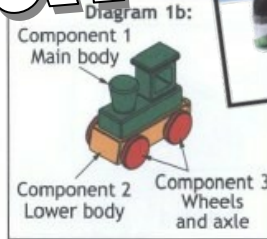
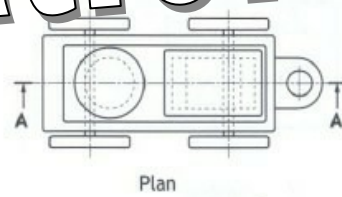
Design & Technology

Graphic Communication



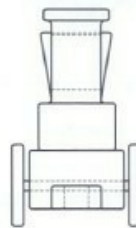
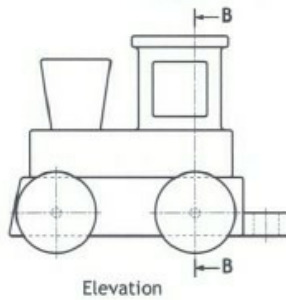
National 4-5

3P'S



Promotion

Preliminary

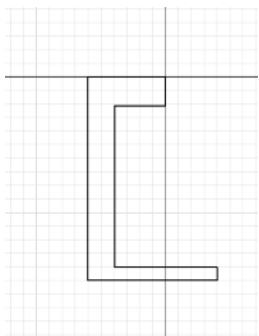


Production

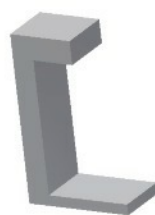
DTP

CAG

CAD



Step 1



Step 2



Step 3



Step 4



Step 5

HOMework

Activity 2 — Use technology!

Why should everything be written down? Have you thought about 'mental' maps, diagrams, cartoons and colour to help you learn? And rather than write down notes, why not record your revision material?

What about having a text message revision session with friends? Keep in touch with them to find out how and what they are revising and share ideas and questions. Why not make a video diary where you tell the camera what you are doing, what you think you have learned and what you still have to do? No one has to see or hear it but the process of having to organise your thoughts in a formal way to explain something is a very important learning practice.

Be sure to make use of electronic files. You could begin to summarise your class notes. Your typing might be slow but it will get faster and the typed notes will be easier to read than the scribbles in your class notes. Try to add different fonts and colours to make your work stand out. You can easily Google relevant pictures, cartoons and diagrams which you can copy and paste to make your work more attractive and **MEMORABLE**.

Activity 3 — This is it. Do this and you will know lots!

Step 1

In this task you must be very honest with yourself! Find the SQA syllabus for your subject (www.sqa.org.uk). Look at how it is broken down into main topics called MANDATORY knowledge. That means stuff you MUST know.

Step 2

BEFORE you do ANY revision on this topic, write a list of everything that you already know about the subject. It might be quite a long list but you only need to write it once. It shows you all the information that is already in your long-term memory so you know what parts you do not need to revise!

Step 3

Pick a chapter or section from your book or revision notes. Choose a fairly large section or a whole chapter to get the most out of this activity. With a buddy, use Skype, Facetime, Twitter or any other communication you have, to play the game "If this is the answer, what is the question?". For example, if you are revising Geography and the answer you provide is "meander", your buddy would have to make up a question like "What is the word that describes a feature of a river where it flows slowly and bends often from side to side?".

Make up 10 "answers" based on the content of the chapter or section you are using. Give this to your buddy to solve while you solve theirs.

Step 4

Construct a wordsearch of at least 10 X 10 squares. You can make it as big as you like but keep it realistic. Work together with a group of friends. Many apps allow you to make wordsearch puzzles online. The words and phrases can go in any direction and phrases can be split. Your puzzle must only contain facts linked to the topic you are revising. Your task is to find 10 bits of information to hide in your puzzle but you must not repeat information that you used in Step 3. DO NOT show where the words are. Fill up empty squares with random letters. Remember to keep a note of where your answers are hidden but do not show your friends. When you have a complete puzzle, exchange it with a friend to solve each other's puzzle.

Step 5

Now make up 10 questions (not "answers" this time) based on the same chapter used in the previous two tasks. Again, you must find NEW information that you have not yet used. Now it's getting hard to find that new information! Again, give your questions to a friend to answer.

Step 6

As you have been doing the puzzles, your brain has been actively searching for new information. Now write a NEW LIST that contains only the new information you have discovered when doing the puzzles. Your new list is the one to look at repeatedly for short bursts over the next few days. Try to remember more and more of it without looking at it. After a few days, you should be able to add words from your second list to your first list as you increase the information in your long-term memory.

FINALLY! Be inspired...

Make a list of different revision ideas and beside each one write **THINGS I HAVE TRIED**, **THINGS I WILL TRY** and **THINGS I MIGHT TRY**. Don't be scared of trying something new.

And remember — "FAIL TO PREPARE AND PREPARE TO FAIL!"

National 5 Graphic Communication

The course

The aims of the course are to enable you to understand how graphic communication is used every day in design, industry and society and to ensure you learn skills and techniques to create graphics to suit any number of purposes.

The types of graphics you will be able to create include:

- preliminary design graphics
- technical production drawings
- high-impact promotional and information graphics.

These are known as the **3 Ps**.

All of your coursework projects and exam questions are based on these types of graphics. The knowledge you need for the exam will come from the work you do during your project work in class.

How you are assessed and graded

The grade you achieve at the end of your course depends on a number of assessments.

Unit Assessment

Both units (2D Graphic Communication and 3D & Pictorial Graphic Communication) are assessed on a pass or fail basis. You must pass both units in order to qualify for a course award.

Course Assessment

Your grade for the National 5 course is derived from two course assessments:

- **The assignment:** this is the project you will complete during the second half of your course. It is worth 60 marks.
- **The course exam paper:** this is the exam you will sit at the end of the course. It is worth 60 marks.

Your marks for the two assessments are added together to give you a total out of 120 marks.

The exam

Duration: 1 hour and 30 minutes

Marks available: 60

The exam will include a mix of short and more extended response questions about the graphics required to design, produce or promote a product.

You should look at the marks awarded for each question. This is a good indicator of the length of answer you should give. For example, for a 3-mark question you will need to make three distinct points, while for a

1-mark question you will need to make only a single point. You should allow yourself around one and a half minutes per mark.

Sketching

Exam questions will be set so that you can answer in writing. However, some questions will invite you to answer using annotated sketches or drawings and space will be left so that you can sketch your answer. **Always take this opportunity.**

Remember:

- This is an exam about graphics and you have all the graphic skills you need.
- It is easier and quicker to describe your answer graphically with annotations than it is to write about it.
- The quality of sketching will not be assessed but the clarity of your answer is important. So make sure your sketches and annotations are clear.

Skills and knowledge

The exam will test you on the following skills and knowledge:

- **Problem solving:** How would you model, render or assemble a 3D CAD model?
- **Creative skills:** How has the graphic designer used design elements and principles to achieve an effective layout?
- **DTP features and edits:** How has the graphic designer used DTP (desktop publishing) software to achieve an effective layout?
- **Advantages and disadvantages:** What are the best methods to choose when creating graphics?
- **Knowledge of drawing standards:** What drawing standards should be applied to orthographic and pictorial drawings?
- **Spatial awareness:** Can you interpret and understand drawings?
- **Graphics in society:** How do graphics affect society? How do we use information graphics?
- **Graphics and the environment:** How can we create and use graphics without damaging our fragile environment?

NAT4-5 Graphic Communication Design Elements notes:

What are Design Elements?

Design Elements: *These are things you will find on magazine pages.*

(You can touch a design element)

C. LUSST

Colour

- Colour is used to attract attention. It can be subtle or bold. Colour can be found in the paper, the text or the graphic elements. A monochromatic colour scheme uses a single colour, perhaps in various tints, while other layouts utilize combinations of two, three or more colours.
- Colour can be used to elicit specific emotions and reactions (colour theory). Red is typically thought of as an attention-grabbing, hot colour. Blues are more calming or convey stability. Some colour combinations are used to create a specific identity (corporate colours, school colours) or may be used in conjunction with texture to simulate the look of other objects (the look of plain paper wrapping or neon lights, for example). Colour may provide cues for the reader.

Line

- Lines can be long or short, straight or curved. Lines can be horizontal, vertical or diagonal. They create patterns. Lines can be solid, dashed, thick, thin or of variable width. Sometimes a designer uses a line alone to **divide or unite elements** on a page.
- Lines can **denote direction** of movement (as in diagonal lines and arrows) or **provide an anchor** to hold elements on a page (such as lines at the top, bottom or sides of a page). You can use lines in conjunction with other elements – a pattern of thick and thin lines arranged in a circular shape.

Size

- This is a general term for elements within a page. It can refer to the actual size of an imported image in mm and also the varying font sizes used within a publication. Size should always be referred to in mm for images or shapes and point sizes for fonts.

Shape

- Shapes are used in desk top publishing to add body and add interest to a page. They can be used to highlight areas of text in conjunction with the appropriate use of colour. In addition they can be used to guide the readers eye i.e. the use of contrasting shapes (a yellow square with a black circle cutting through it) and stylised shapes that may represent real life objects.

Texture

- For desktop publishing, actual texture is the feel of the paper. Is it rough or smooth to the touch? Textures can also be visual. On the Web, especially, backgrounds that simulate familiar fabrics, stone, and other textures are common. Certain printing and finishing techniques such as thermography and embossing can add both actual and visual textures to a printed piece.

C. LUSST

NAT 4-5 Graphic Communication Design Principles notes:

What are Design Principles?

Design Principles: These are theories about the design of a magazine page.

PC. BRAW

(A design Principle is 'theory')

Proportion

- Proportion relates to size in a design and the manner in which the size relationships work within the composition. Are the images much larger than the text?

Contrast

- Can be used through typeface choices, line thickness, colours, shapes, sizes, space, etc. Contrast provides a means of emphasising what is important or leading the reader's eye. By using contrast you can highlight specific areas of your publication.

Balance

- We are looking for a point or axis about which the weight of the different elements is balanced. Balance can be either symmetrical or asymmetrical or radial. Banks for example tend to use a more formal layout favouring symmetrical layouts with everything on the page being balanced. Modern publications will use asymmetrical layouts to create a more exciting style.

Rhythm

- Rhythm is the repeated use of elements like lines, shapes and space throughout a page or pages to give the design vitality. It is the use of repetition to unify and add visual interest. This is often referred to as the flow of the publication and the correct use of rhythm make any publication easier to read.

Alignment

- Alignment is the visual connection with another element on the page. This could refer to text and graphic elements. Items should not be placed randomly on the page as this will confuse the reader.

White space

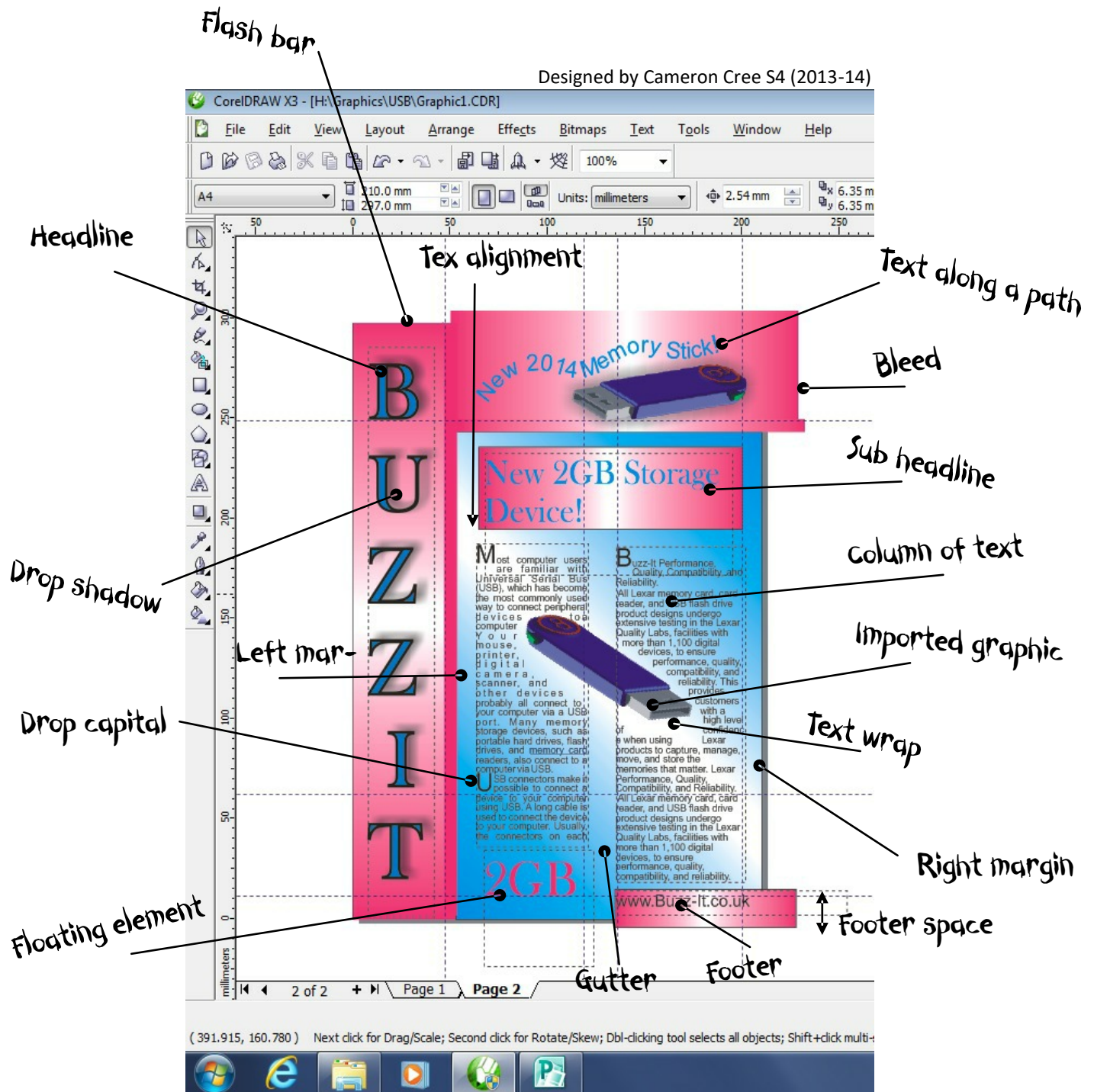
- White space is areas of a publication which have no text or images. In a busy design the use of white space gives the reader a rest and can also direct the reader's eye to other areas of the page. It works best when it is clearly demarcated and has a recognisable shape. **Remember White Space doesn't need to be white!**

Proximity / Unity

- The grouping together of related items into close proximity creates organisation. Relates to using the elements within the design to create a sense of oneness and consistency in a design to make it interesting.

PC. BRAW

DESKTOP PUBLISHING TERMINOLOGY



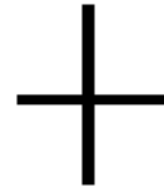
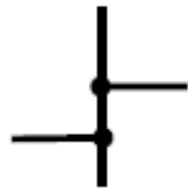
DTP Terms

Bitmap, Bleed, Body of text, Caption, Clip-art, Column, Cropping Drop cap, Drop shadow, Eye dropper, colour picker, Text along a path, Footer, Footer space, Font typeface, frames, graphic, Grid, Guidelines, Gutter, Handles, Header, Header space, Headline/Title, Import/export, Jpeg, Margins, Mirror, formatting, Portable network graphic (PNG), Point size, Reverse text, Snap, Sub-heading, Text alignment, Text wrap, Transparency, Vector graphic.

Symbols — Electrical

MUST be learned

Pupils should be familiar with and be able to reproduce the following selected symbols. Pupils should also be aware of the need for standardising symbols within various industrial sectors and should be aware of the existence of the British Standards Institution and its work. The WEB address is WWW.BSI.org.uk



Junctions and cross-overs



* Primary or Secondary cell

Battery

Electric bell



*

Signal lamp (general)



*

Power Socket Outlet



*

Switch
(General Symbol)



Electric Clock

Switch



Microphone



Earphone



Loudspeaker

Signs — General

**Symbols marked by *
MUST be learned**

Pupils should be aware of and recognise the following symbols and also how such symbols are combined with the appropriate safety sign category.



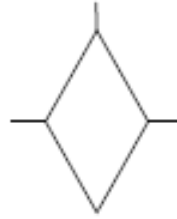
Hazard Warning



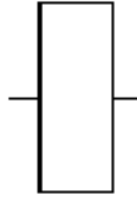
Male



Female



Decision



Predefined
Process



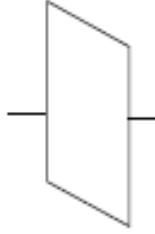
Terminator



Fragile



Keep Dry



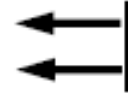
Data



Safety Mark

*

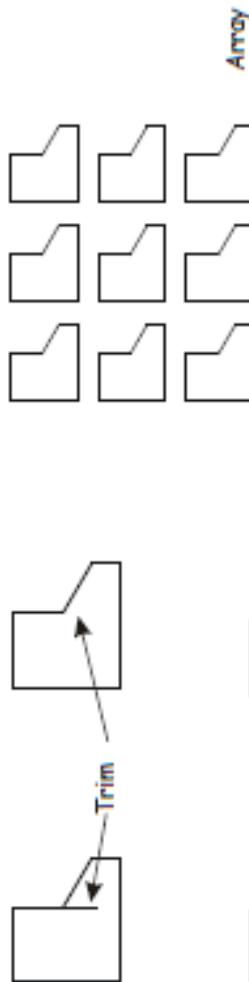
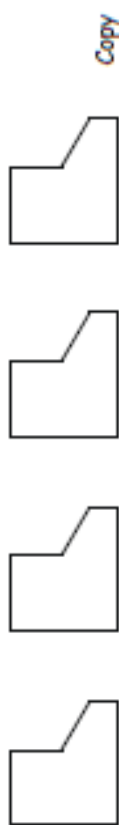
Kite Mark



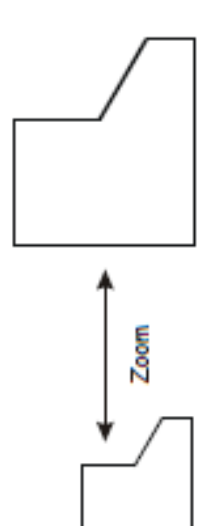
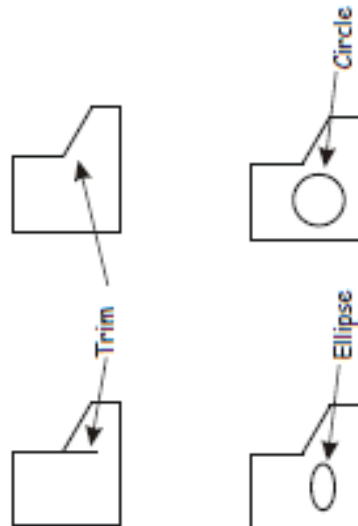
This Way Up

IDENTIFYING SYMBOLS

Common CAD Commands



Copy means to copy an object to the clipboard.
 Paste means to paste the contents of the clipboard onto the page.
 Undo means to reverse the last command.
 Move means to move an object to a new position on the page.
 Erase means to remove part of a drawing.



IDENTIFYING SYMBOLS

Symbols — Architectural

MUST be learned



In-line valve (any type)



Wood, any type, sawn



Softwood, machined

Brickwork



Window



Sink, any type



Bath



Radiator



Insulation



Concrete

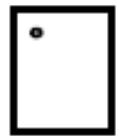


Wash basin



Door

Shower tray



Sink top

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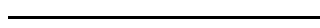
*

IDENTIFYING LINE TYPES



Continuous thick

Used for visible outlines and edges.



Continuous thin

Used for projection, dimensioning, leader lines, hatching and short centre lines.



Continuous thin straight with zigzags

Used for limits of partial or interrupted views and sections if the limit is not an axis.



Dashed thin line.

Used for hidden outlines and edges.



Chain thin.

Used for centre lines, lines of symmetry.



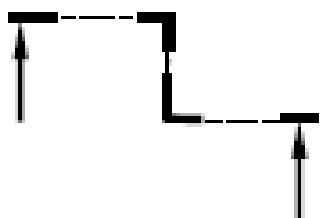
Chain thin double dash

Used for ghost outlines and bend



Continuous thin irregular

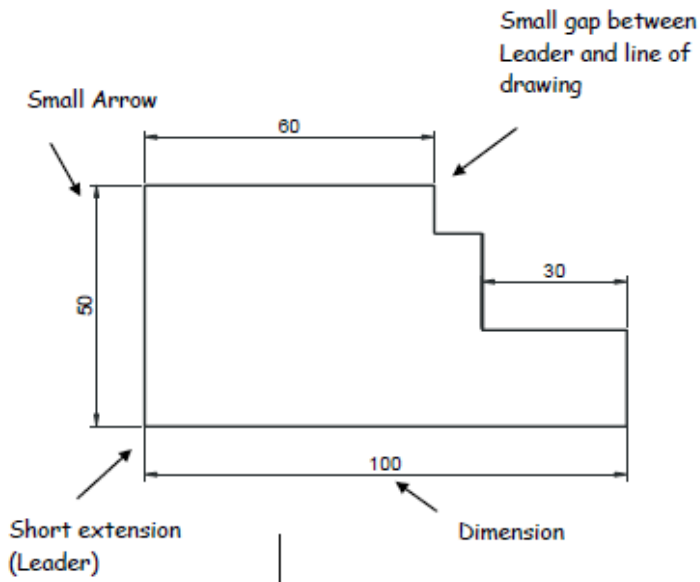
Used as the limit to an interrupted view when an axis is not present.



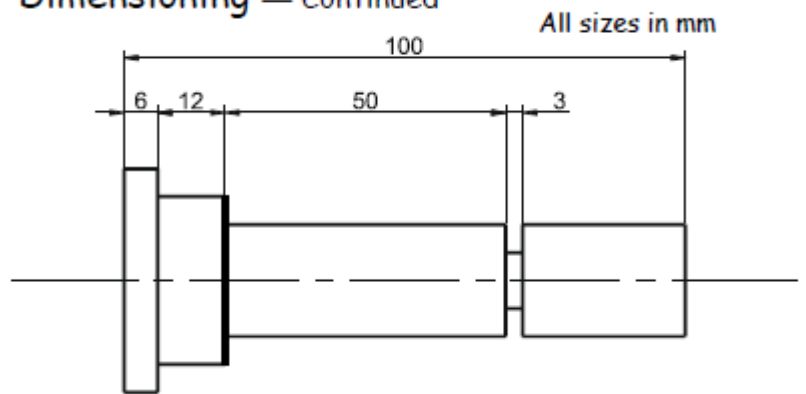
Chain thin thick at both ends and changes in direction

Used on Cutting planes.

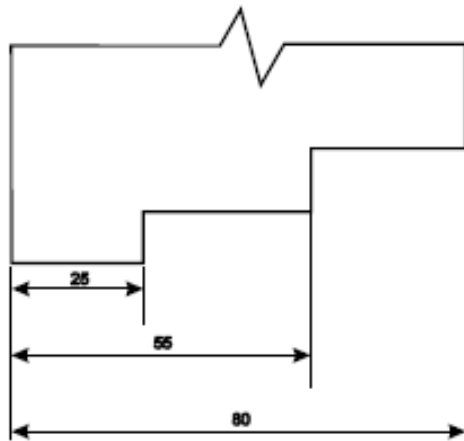
HOW TO ADD DIMENSIONS to BS 8888



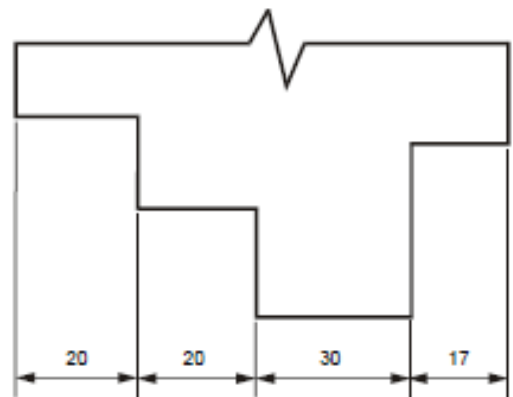
Dimensioning — Continued



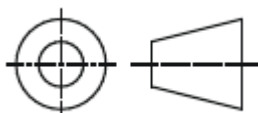
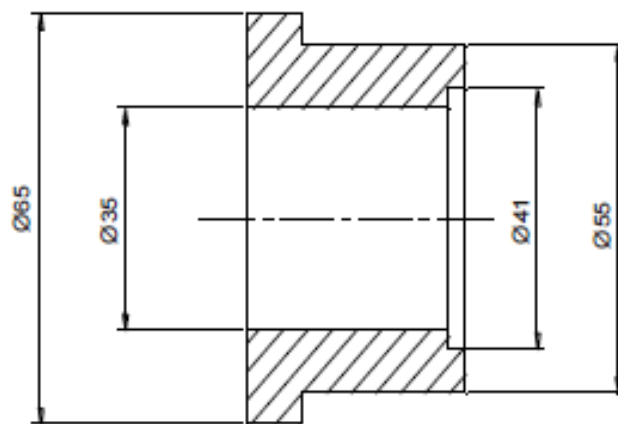
Dimensioning methods



Parallel dimensioning

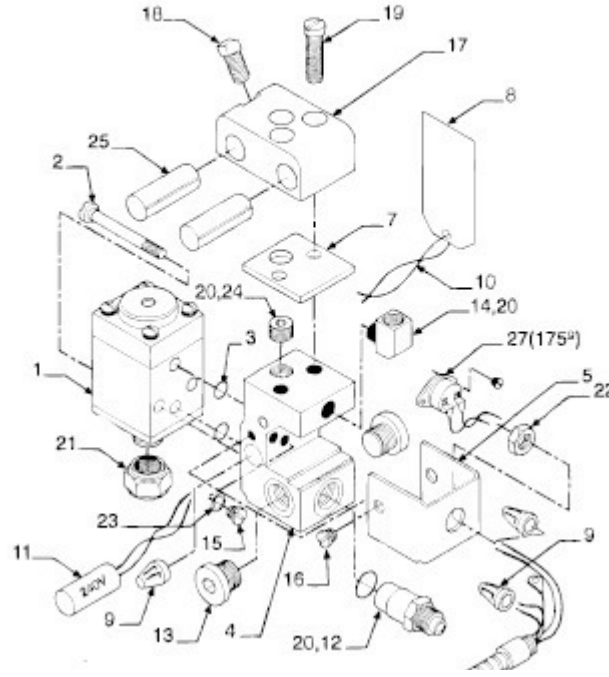


Chain Dimensioning



IDENTIFYING DRAWING TYPES

Exploded Isometric



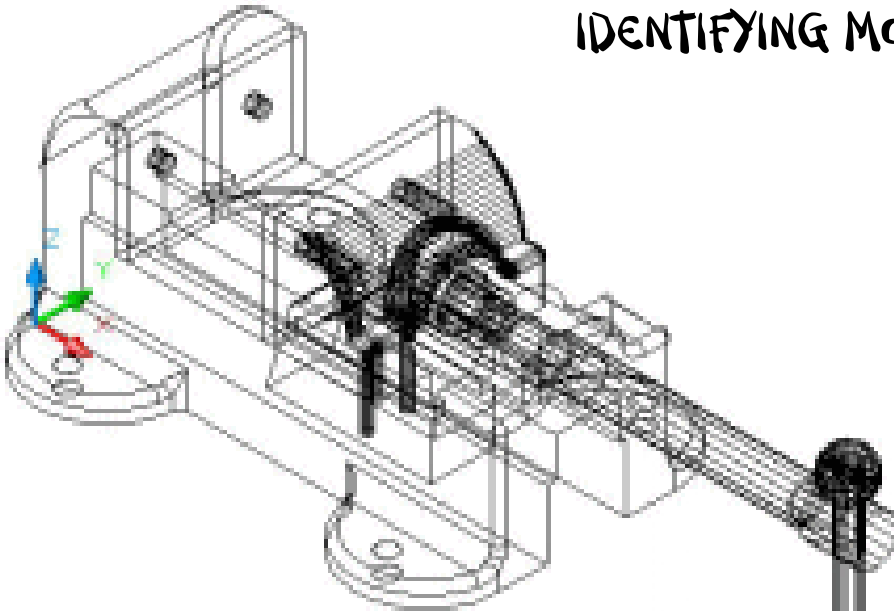
Advantages of CAG over manual drawing

- Drawings are produced quicker and very accurately.
- Drawings are easier to edit/change.
- Libraries of various parts can be created.
- Lead time can be reduced.
- Quality of drawings are improved.
- Convenience of use (Lap top).
- Standardisation.
- Drawings can be easily scaled up or down.
- Use of layers allows different parts to be drawn separately.
- Easier to store drawings.
- Easier to send drawings to another location quickly.
- True 3D modelling made easy.
- New designs from existing designs.

Disadvantages of CAG over manual drawing

- Overall cost of hardware.
- Overall cost of software.
- Continual need to upgrade systems to stay competitive.
- Risk of catching computer viruses.
- Staff training costs.
- System faults/crashes.
- Data loss security.

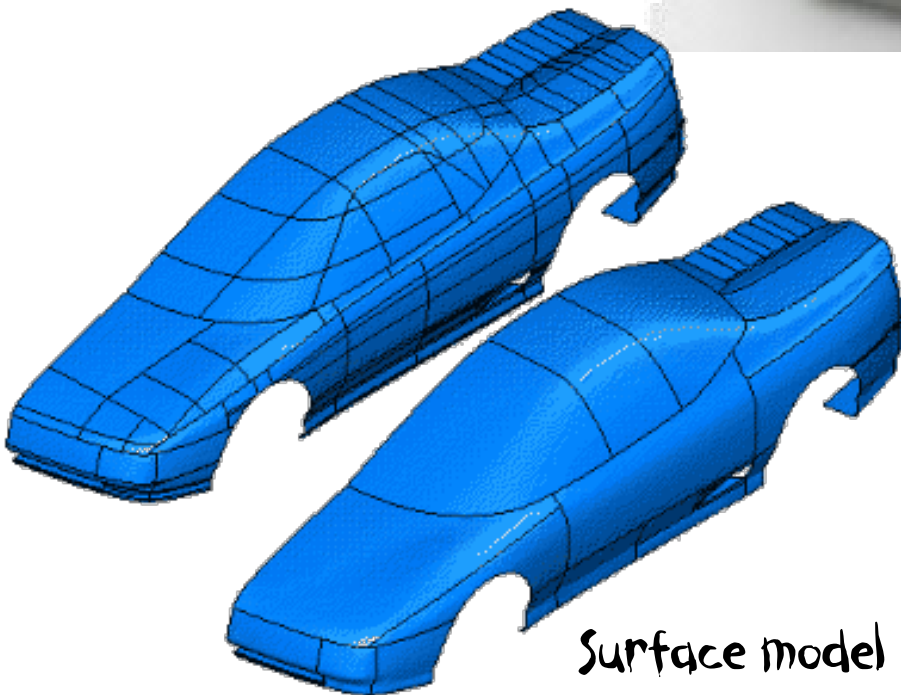
IDENTIFYING MODELLING TYPES



Wire frame model

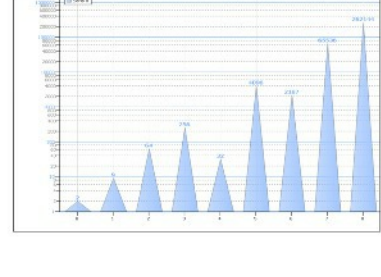
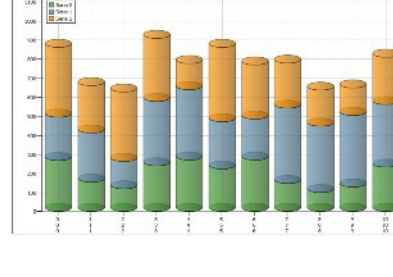
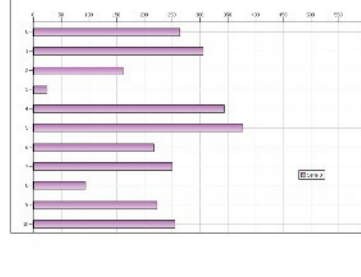
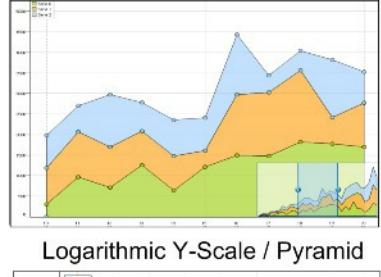
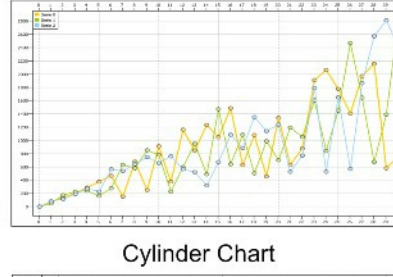
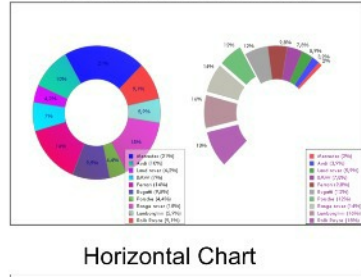
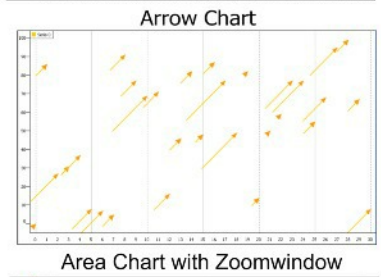
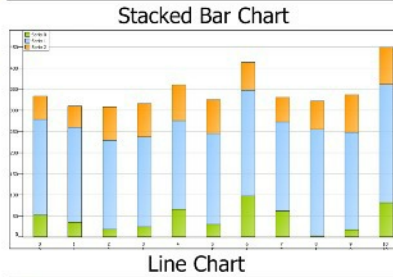
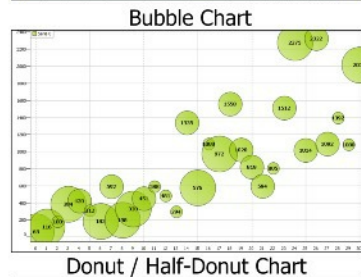
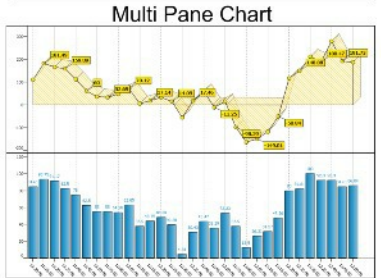
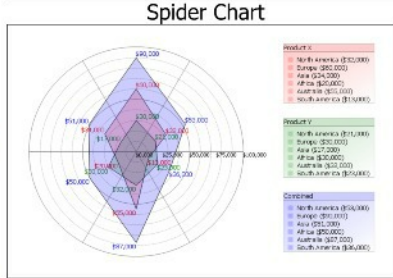
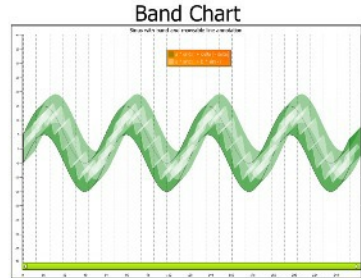
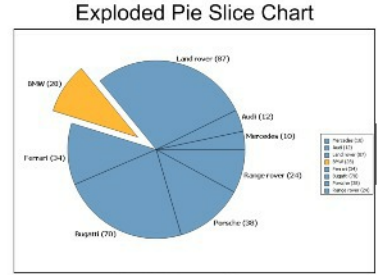
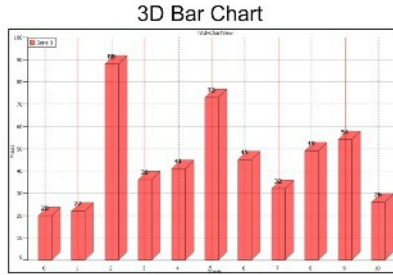
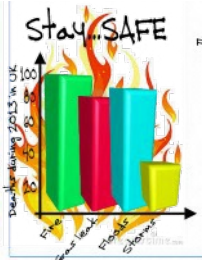


Solid model



Surface model

IDENTIFYING Graphs/charts



These are graphs & charts showing a variety of information



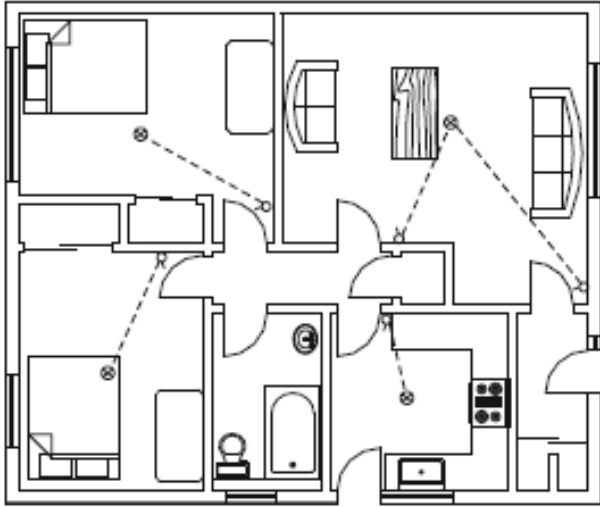
Book Your Flights	
From	NEWCASTLE
To	Dalaman (Turkey)
Leave on	
Return	May 2011
One way	NEWCASTLE - Dalaman (Turkey)
Flexible	
Adults	Mo Tu We Th Fr Sa Su
Children	2 3 4 5 6 7 8
Infants	9 10 11 12 13 14 15
Wheelch	16 17 18 19 20 21 22
	23 24 25 26 27 28 29
	30 31

Book Your Flights	
From	MANCHESTER TERMINAL 1
To	Dalaman (Turkey)
Leave on	
Return	Oct 2011
One way	MANCHESTER TERMINAL 1 - Dalaman (Turkey)
Flexible	
Adults	Mo Tu We Th Fr Sa Su
Children	3 4 5 6 7 8 9
Infants	10 11 12 13 14 15 16
Wheelch	17 18 19 20 21 22 23
	24 25 26 27 28 29 30
	31

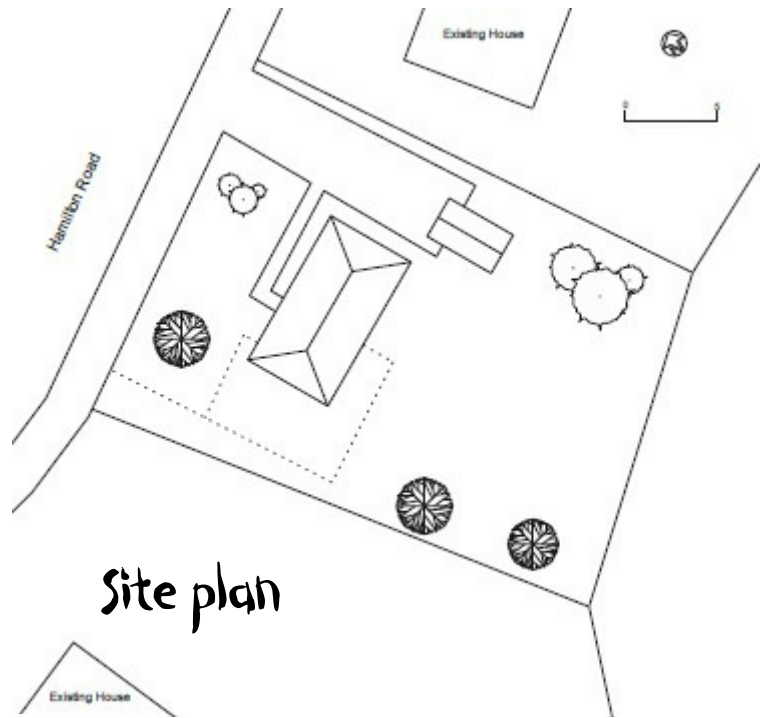
This is a timetable chart giving information on flights over a period of time

IDENTIFYING TYPES OF PLANS

Type of Drawing	Floor Plans	Site Plans	Location Plans
Preferred Scales	1:50 or 1:100	1:200 or 1:500	1:1250 or 1:2500



Floor plan



Site plan



Location plan


1

The safety symbols below are displayed in commonwealth games construction areas.

In the position indicated, tick the type of safety symbol shown and name the appropriate safety colour which should be used.


Prohibition
 Safe Condition
 Mandatory
 Warning

Colour used here:



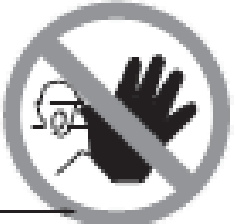
Prohibition
 Safe Condition
 Mandatory
 Warning

Colour used here:



Prohibition
 Safe Condition
 Mandatory
 Warning

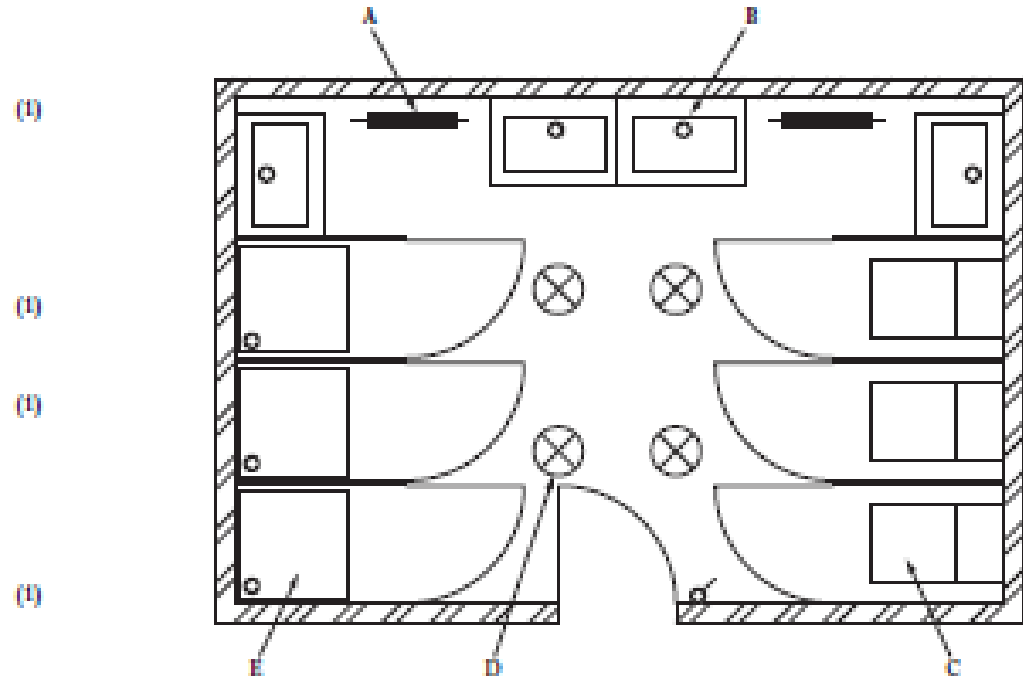
Colour used here:



(6 marks)

2

A CAD floor-plan is shown for a sports changing facility is shown below. State the name of the BSI Symbols shown at A, B, C, D & E



(1)

(1)

(1)

(1)

(1)

A (1)

B (1)

C (1)

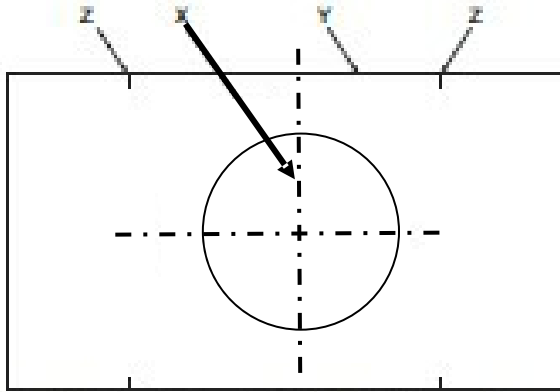
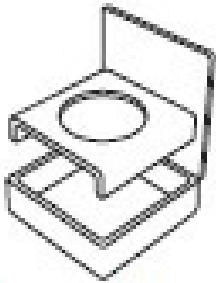
D (1)

E (1)

(5 marks)

3

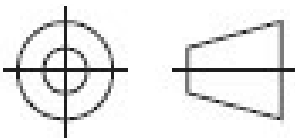
A metal box & plastic insert is shown below. The surface development of the plastic inners are also shown...



A. Identify, according to BS 8888 the 2 line types shown.
 X: Y:

A. Add, according to BS8888, the 2 missing fold lines marked 'Z'

A) State the name of the BS symbol shown below.



(1) (4 marks)

3b

Name the following DTP terminology below

1

1

1

1

1

Designed by Jack Scott S4 (2013-14)

1

(5 Marks)

. The Harley Davidson company manufactures motorcycles. They have had a successful 2013 and are looking forward to increasing sales in 2014. 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 on the right.....



4

Based on Sales figures A:

i. State the best type of graph or chart to use when presenting Sales figures 'A' information;

ii. state one reason for using this type of graph or chart.

Based on Sales figures B:

iii. State the best type of graph or chart to show the Sales figures B over the year;

iv. State **one** reason for using this type of graph or chart.

SALES FIGURES 'A'	
Worldwide motorcycle sales by percentage (%)	
UK sales	11%
European sales	27%
USA sales	37%
Sales in other countries	5%

1

1

1

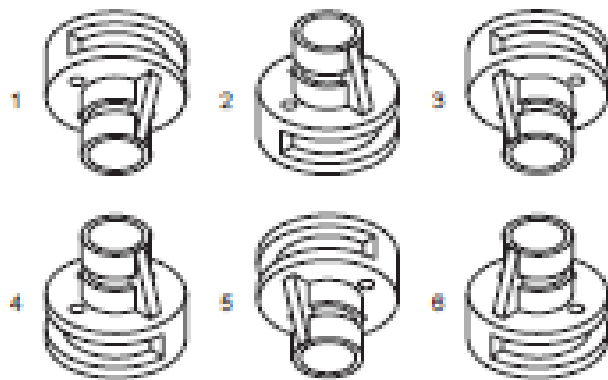
1

SALES FIGURES 'B'	
Monthly motorcycle sales in 2013	
Month	No of Sales
January	1600
February	1100
March	1200
April	2600
May	2200
June	3200
July	5600
August	6900
September	2400
October	1150
November	1100
December	1600

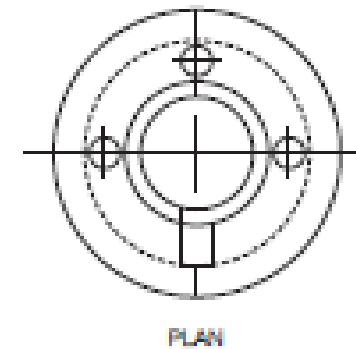
4

Self

The elevation, end elevation and plan of part of a pipe bracket are shown in Drawing X and are drawn using BSI drawing conventions.



Drawing X



(a) State which two of the views 1 to 6 above, represent the bracket shown in Drawing X.

Answer 1 Answer 2

KI 2

(b) State the name given to the types of view shown above.

Answer

KI 1

(c) State the general name given to views like the ones above, in which you see all three dimensions.

Answer

KI 1

(d) Views 1 to 6 above are not drawn to scale. State two factors that effect the scale used for drawings.

Answer 1

.....

Answer 2

.....

KI 2

(e) BSI drawing conventions are commonly used in the production of new designs. State one possible benefit to be gained by their use.

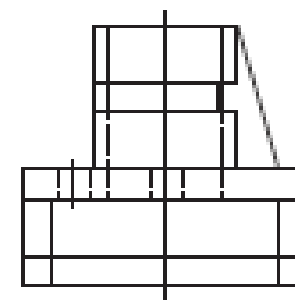
Answer

.....

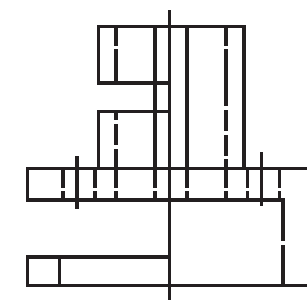
KI 1

(f) Using the correct BSI convention for dimensioning, draw a diameter and a height to the elevation on Drawing X.

KI 2



END ELEVATION



ELEVATION

Total (KI 9)

Q 8 . A Graphic Designer has produced 2 PROMOTIONAL layouts.

i. State one instance where **ALIGNMENT** has been used in Layout 1

_____ 1

ii Describe the effect **ALIGNMENT** has in Layout 1

_____ 1

iii Describe **two** ways in which the designer has created **UNITY** in Layout 2

_____ 1

_____ 1



LAYOUT 1



LAYOUT 2

iv Describe in **two** methods in which the designer has created **CONTRAST** in Layout 3

1

iv. Early in the design process, the designer considered moving the 'Logo' away from Position 1 to Position 2 as shown below. State **one** reason for doing this

1

Scotland will host the Commonwealth Games during the summer of 2014. There will be lots of events that people can go and watch. Crowds are expected to be large. People are therefore advised to buy their tickets as soon as they can. Tickets can be bought from a large number of outlets across the UK. Prices are very reasonable and people can buy tickets for up to five events.

Good Luck Everyone.....

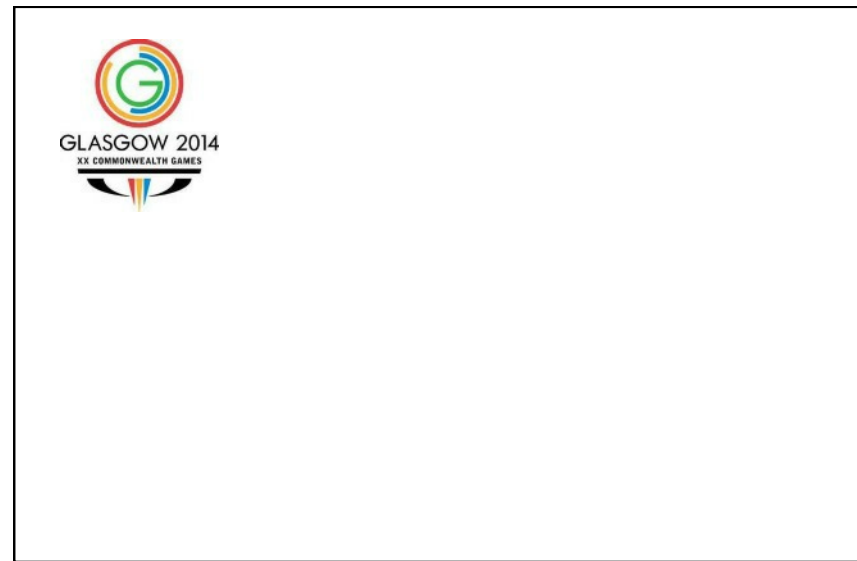




LAYOUT 3



Position 1



Position 2

2

. In the final DTP layout shown opposite, the designer chose **blue** for the background colour.

(i) State whether blue is an advancing or receding colour.

1



Final Layout of 'Scotland's Games' Promotional Item

Q . The colours used on 'Clyde' the mascot are shades of red, green and blue. The designer wishes to create a more **harmonious** colour scheme on the 'Icon' and considered changing the red shade to another colour.

i. State a **tertiary** colour the designer could have tried instead of red.

1

ii. Describe the effect that the blue background colour has on this visual.

1



Clyde

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

i. State **two** ways in which the publisher can reduce the magazine's impact on the environment.

2

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

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

1

Scotland will host the Commonwealth Games during the summer of 2014. There will be lots of events that people can go and watch. Crowds are expected to be large. People are therefore advised to buy their tickets as soon as they can. Tickets can be bought from a large number of outlets across the UK. Prices are very reasonable and people can buy tickets for up to five events.

Good Luck Everyone.....

GLASGOW 2014
XX COMMONWEALTH GAMES

Scotlands Games

Self

3

Final Layout of 'Scotland's Games' Promotional Item

A scale of 2:1 was added to the Orthographic drawing below, Figure 3. Explain what scale 1:2 means.

1

Dimensions are not normally added to orthographic assembly drawings.

i. State the type of orthographic production drawings that will normally include dimensions.

1

Sectional drawings are shown below.

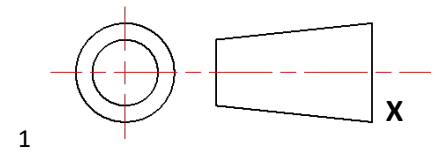
ii. State **one** benefit of using a sectional drawing in relation to this hair dryer.

1

iii. State the name of the symbol shown at X.

1

iv. Describe the purpose of this symbol.

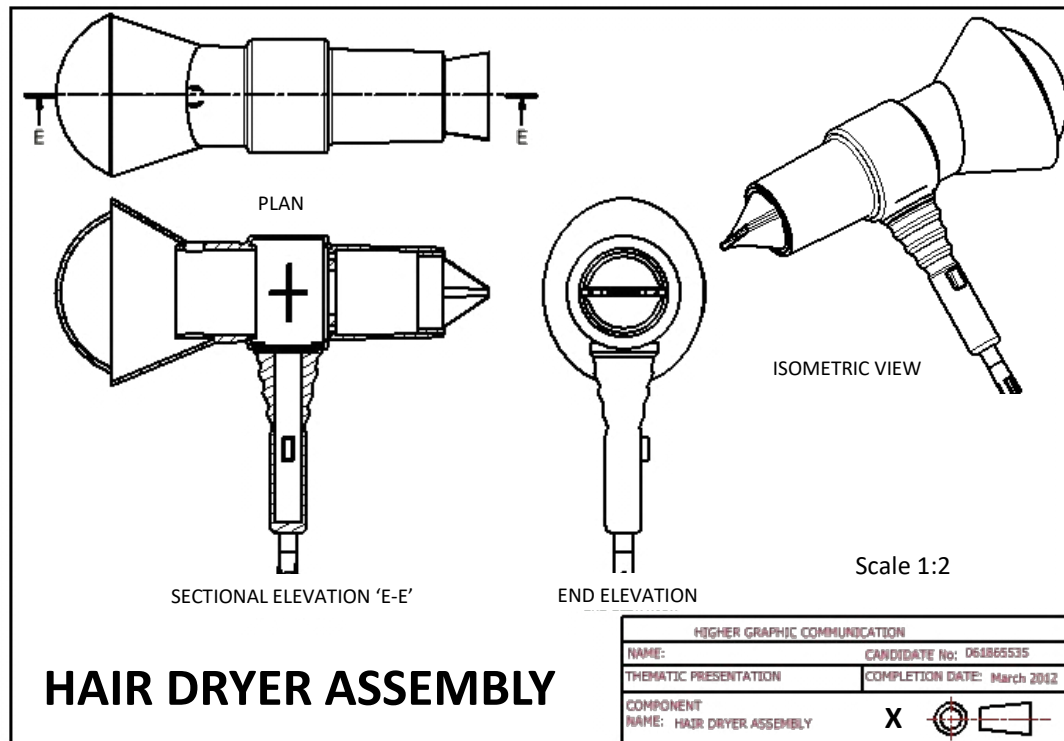


1

v. State where on orthographic drawings, the information

“All sizes in mm” may be found.

1



HAIR DRYER ASSEMBLY

Designed by Gemma Nairn S6 (2013-14)

Figure 3

6

. A completed promotional item highlighting a future vote on Scotland’s possible independence, is shown on **page 24 (Layout 2)**. The text and the images used in the promotion are laid out in their **original** form on **page 25 (Layout 1)** . The original (**Layout 1**) graphics and text were edited in a **DTP** package before being placed in the final promotional item (**Layout 2**).

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 (Layout 2).

Do not include “**scaling** or **resizing**” in your answer.

Ensure you do not use the same answer twice.

(i) Photograph of the ‘**First Minister**’ —state **one** DTP edit. 1

Edit _____ 1

(ii) **The Referendum date** —state **one** DTP edit. 1

Edit _____ 1

(iii) “**Slogan**”—state **one** DTP edit. 1

Edit _____ 1

(iv) “**Slogan**”—state **another** DTP edit (do not repeat a previous answer). 1

Edit _____ 1

(v) **The Scotland & Union Jack flag (Flash bar)**—state **one** DTP edit. 1

Edit _____ 1

vi. State **one** way in which the **final layout** of the **slogan** improves the promotional poster.

vii. When setting up the layout the designer used the following DTP features: 2

Grid and **Snap to grid**. State **two** ways in which the use of **Grid** and **Snap to grid** benefit the

graphic designer. 2



Scotland flag

Date of referendum

First Minister of Scotland

Scotland & Union Jack flag (Flash bar)

Scotland & Union Jack flag (Flash bar)

Slogan

LAYOUT 2

Information for Q11 on page 23

Scotland & Union Jack flag (Flash bar)



Scotland flag



First Minister of Scotland



Date of referendum



Yes
No

YOUR CHOICE

Slogan

LAYOUT 1

12

A Describe 3 advantages of using a CAD package over manual drawing methods in the production of architectural drawings.

- 1-.....
.....(1)
- 2-.....
.....(1)
- 3-.....
.....(1)

B List 2 input, and 2 output devices (**other than plotters**) that could be used in the production of architectural drawings

INPUT DEVICES	Example 1	Example 2	(2)
OUTPUT DEVICES	Example 1	Example 2	(2)

C Explain the operation in relation to paper and pen movement of the following two output devices.

- (a) Drum Plotter.....
.....(1)
- (a) Flatbed Plotter.....
.....(1)

13

The Elevation and End Elevation of a component are shown in **Drawing X**.

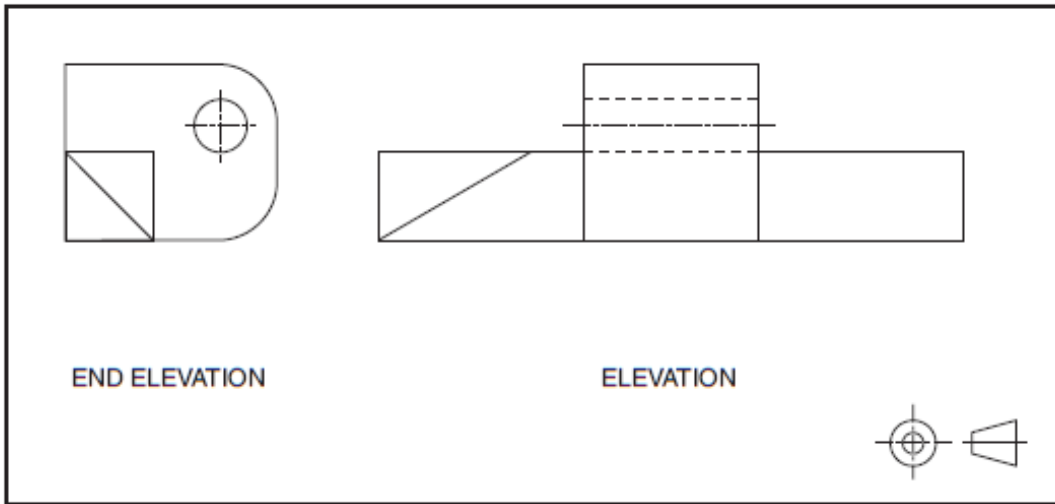
(a) 6 Pictorial views of a component are shown below that, select which 2 of the 6 pictorial views represent the views in **Drawing X**.

Answer _____ Answer _____ (2)

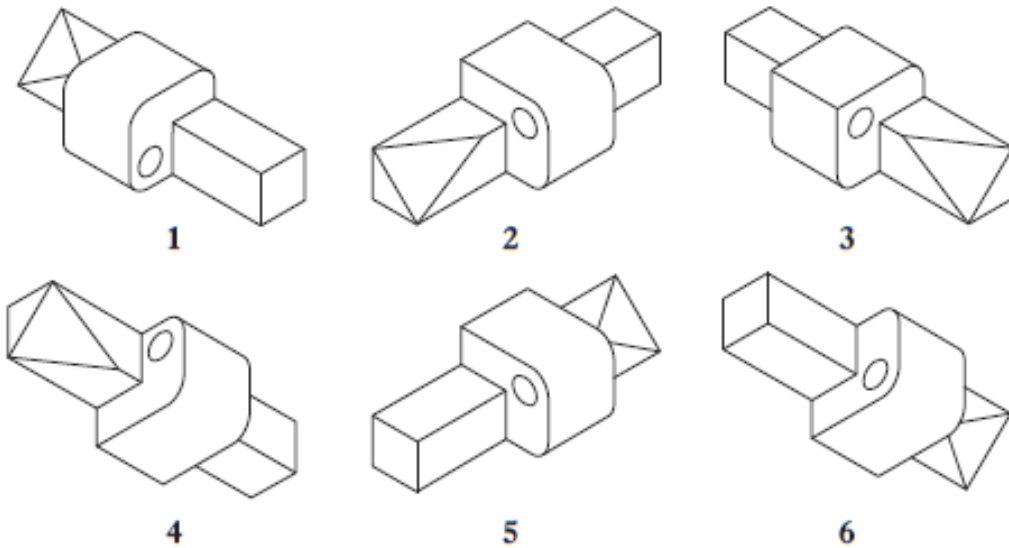
(b) Dimension one height, and one width on **Drawing X** to the correct British Standard conventions. (2)

(c) What type of drawing is **Drawing X**? Answer _____ (1)

5



DRAWING X



14

Label the magazine page to show the Desktop Publishing and Illustration terms below. (Fill in one of the given answer choices in each of the boxes provided)

- (a) Column (1)
- (b) text wrap (1)
- (c) Gutter (1)
- (d) Footer (1)
- (e) Aligned Text (1)

1

1



1

1

1

1

1

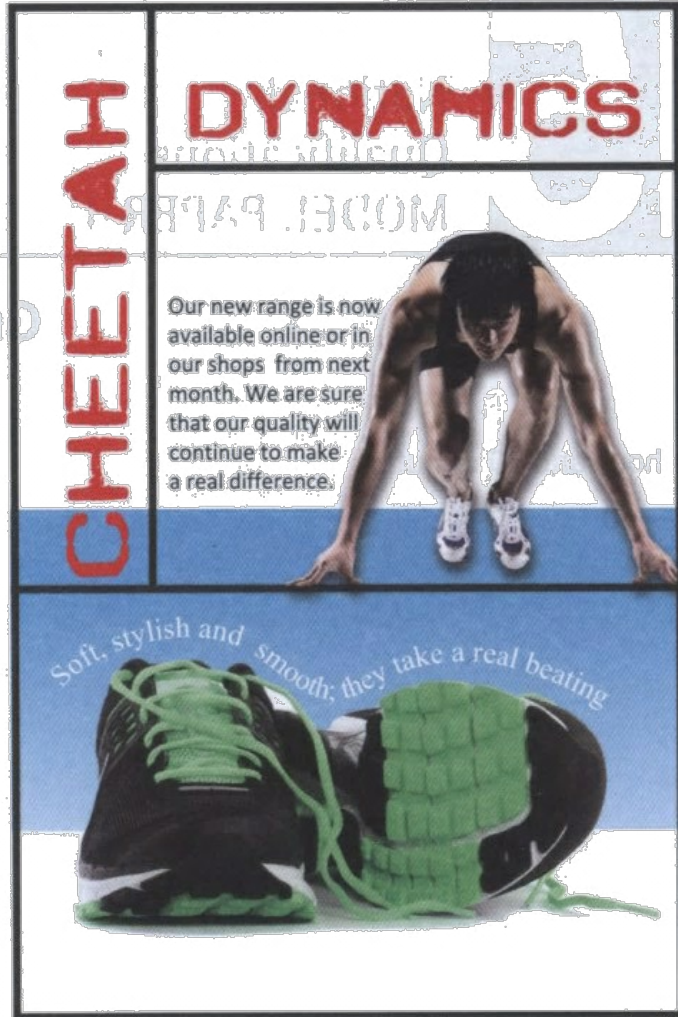
1

5

1

15

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

(continued)

(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

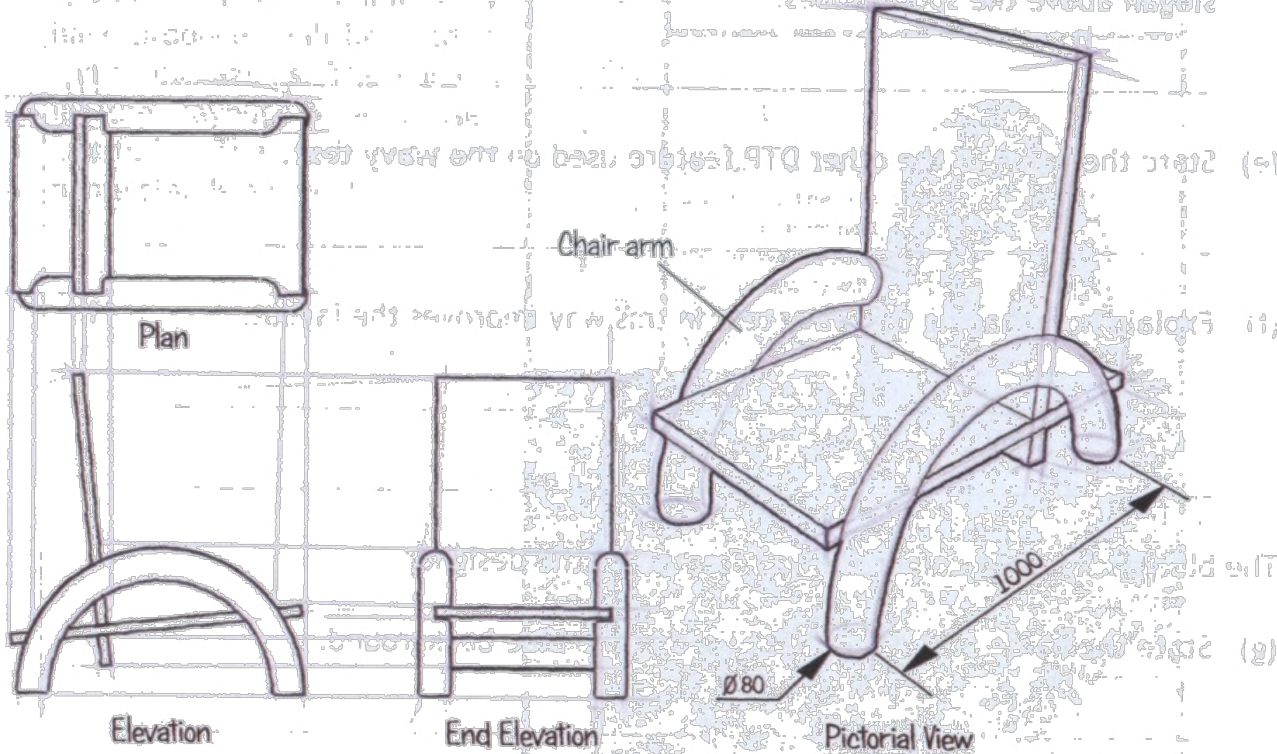
(f) Explain how shaping the wavy text in this way improves the layout. 1

The blue background colour fill was created by the designer.

(g) State the name of the fill effect used in the blue background. 1

16

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

3

17



(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).

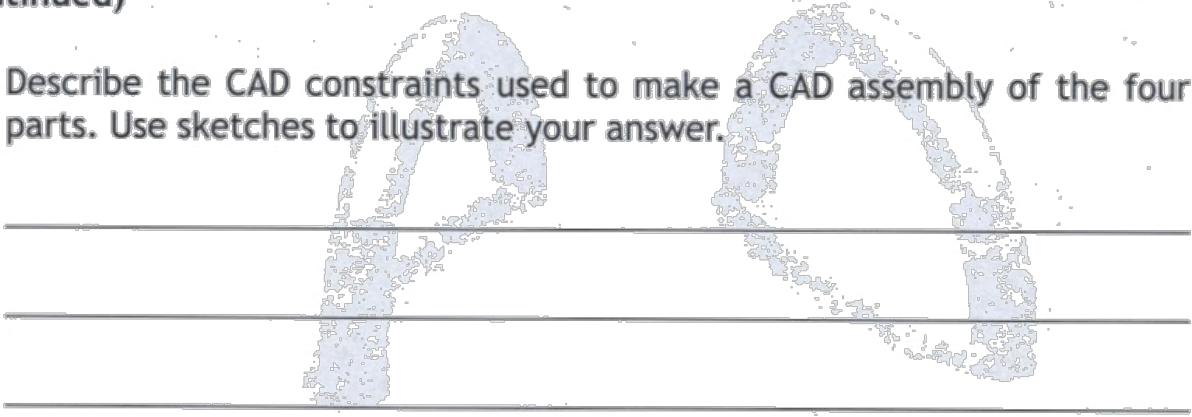
(continued overleaf)

2

17

(continued)

- (c) Describe the CAD constraints used to make a CAD assembly of the four parts. Use sketches to illustrate your answer. 4



(continued)

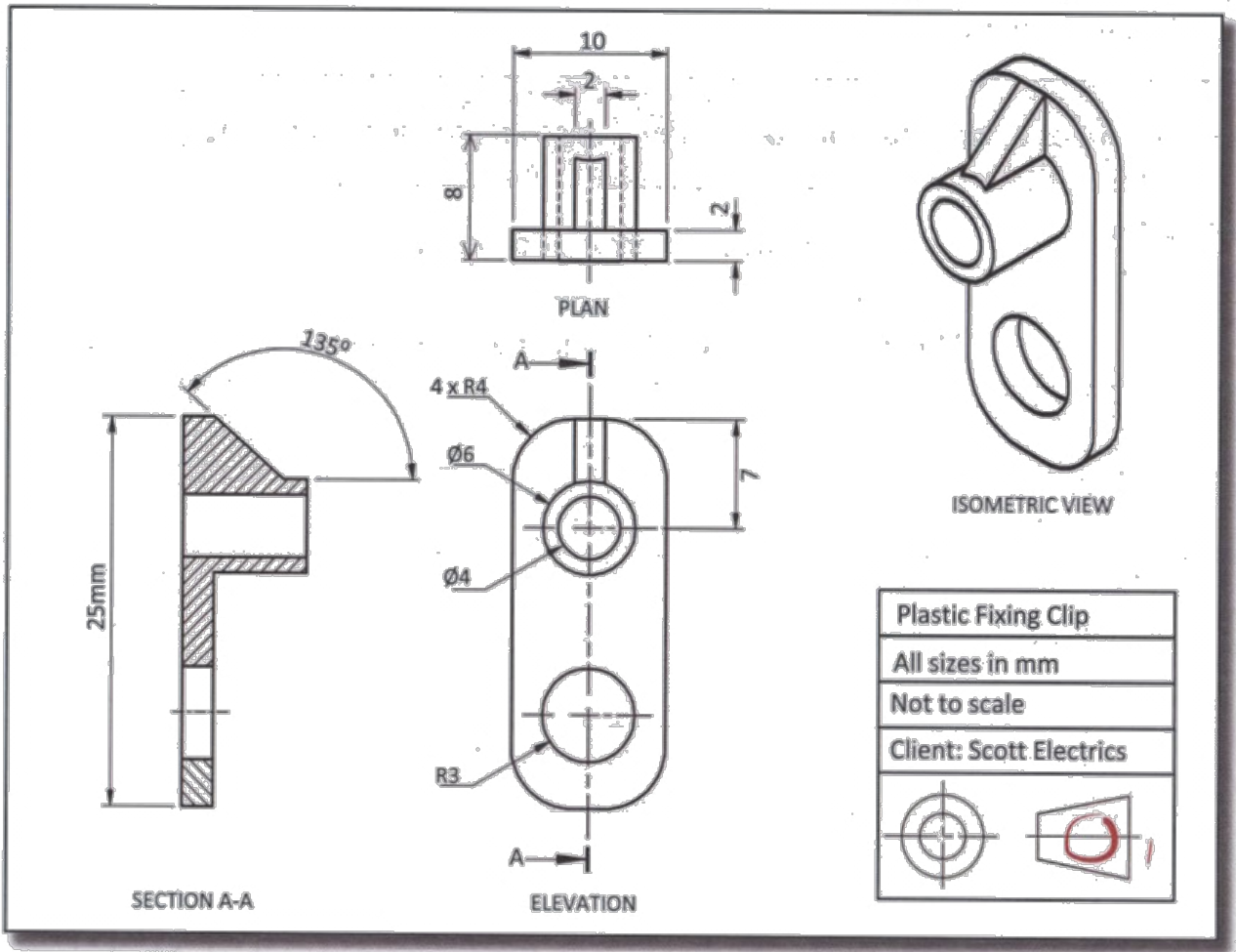
Describe the CAD constraints used to make a CAD assembly of the four parts. Use sketches to illustrate your answer.

4

18.

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

2

19

USING INFORMATION FROM THE ORTHOGRAPHIC ON PAGE 34.....

- a. 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/omission	Description of error/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.

- b Describe two ways in which CAD models and drawing standards can make this international work easier.

CAD Models: 1

Drawing Standards: 1

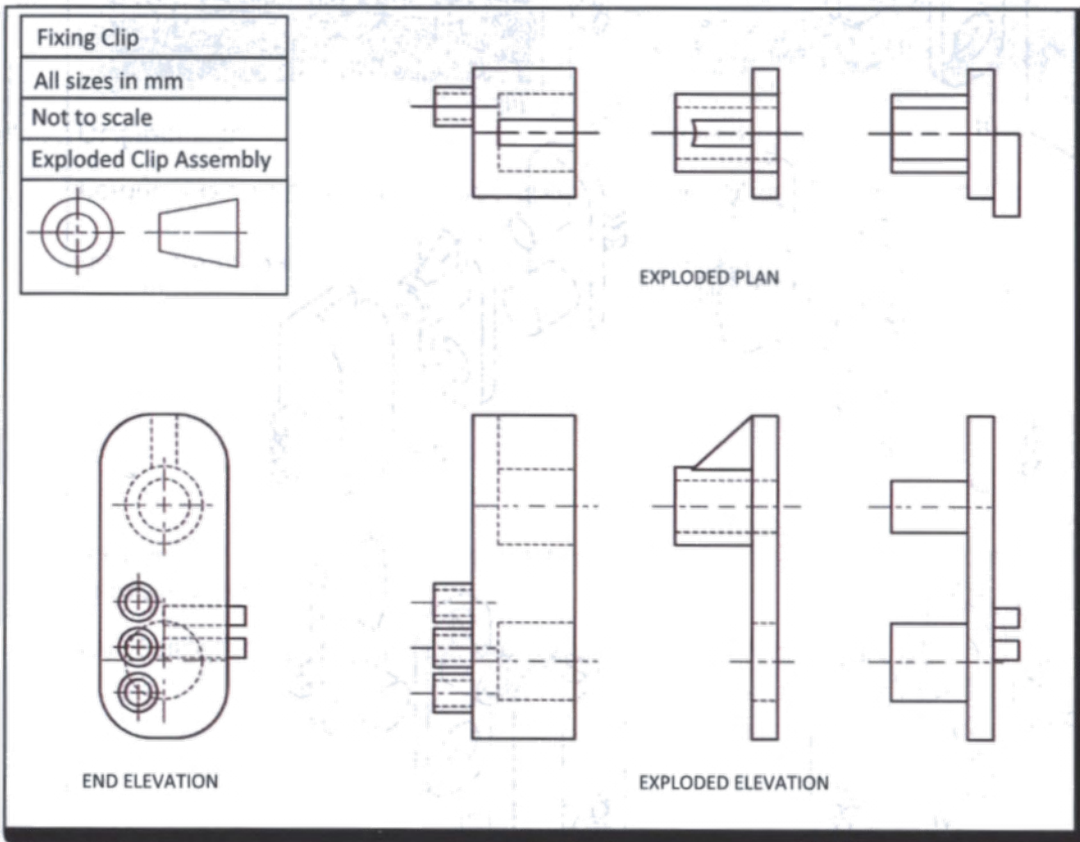
19

(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.

c 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)

2

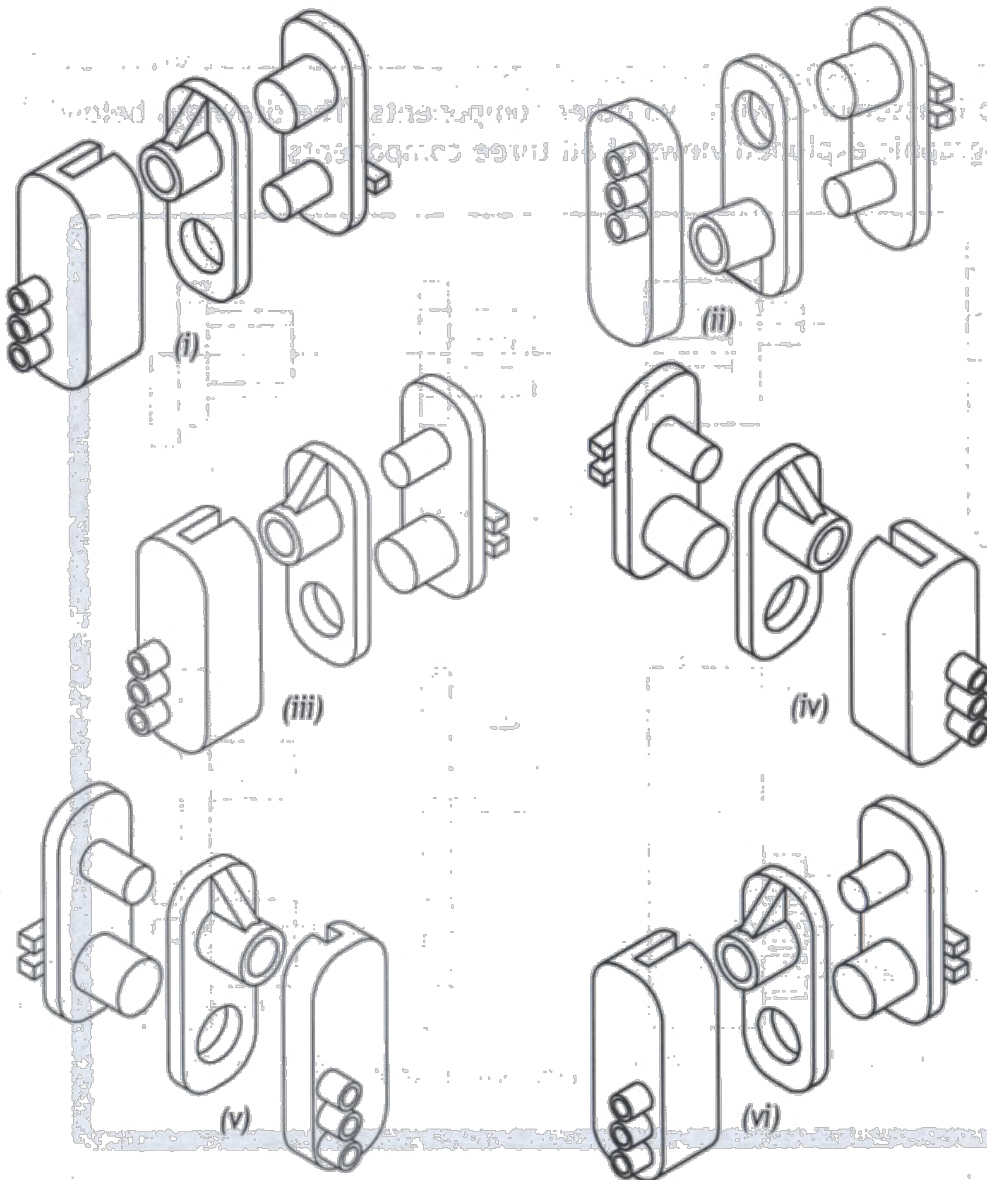
19

(continued)

(continued)

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

- d. 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

1

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.

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

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

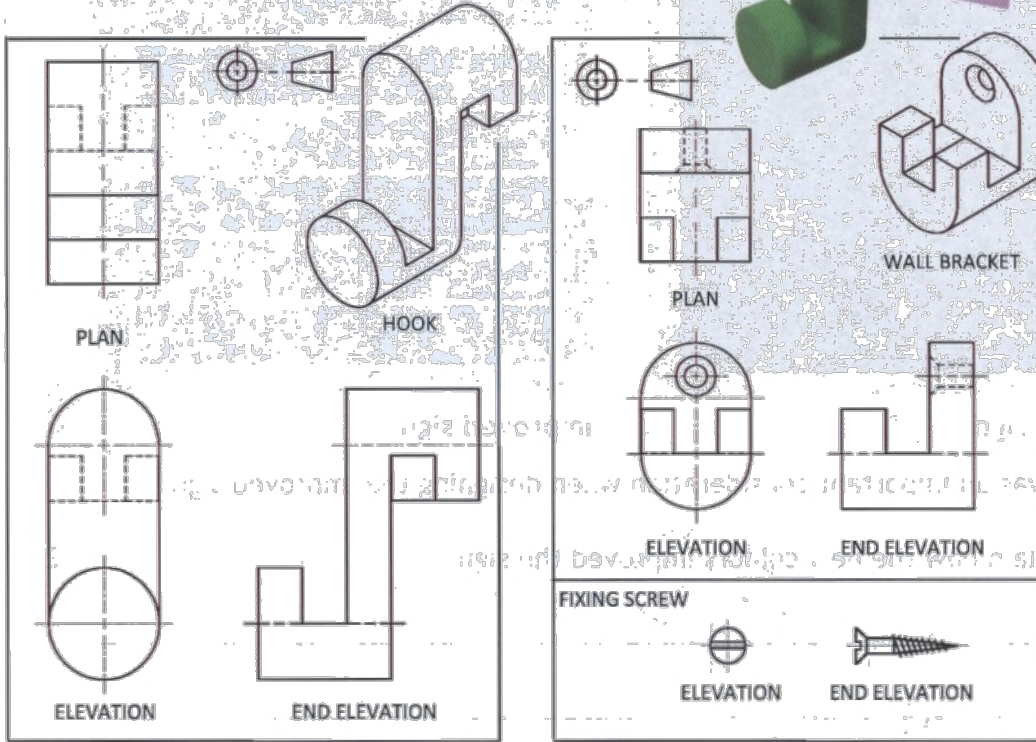
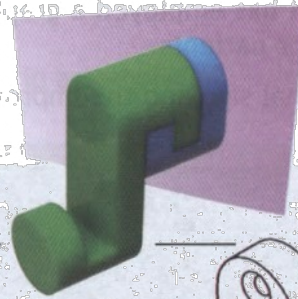
Visitors felt that it was easier and quicker to understand the improved sign.

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

2

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.

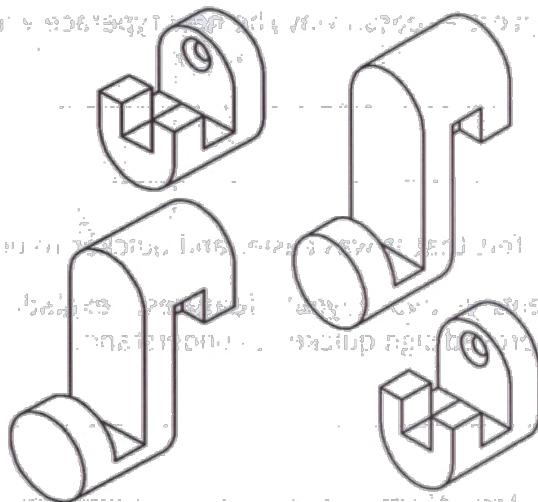
Study the drawings and answer the questions.



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

Isometric exploded view _____ is incorrectly exploded.

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



VIEW A VIEW B

Isometric exploded views

The fixing screw is missing from the exploded views.

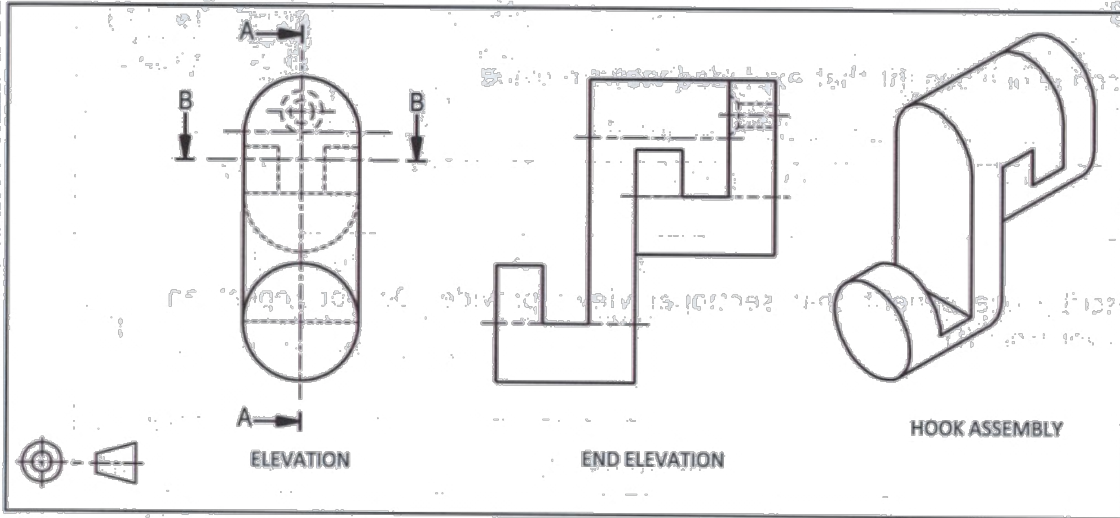
- (c) Indicate the position and direction of the fixing screw on the correctly exploded isometric view.

1

1

1

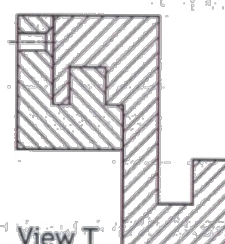
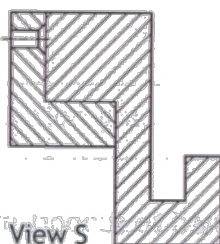
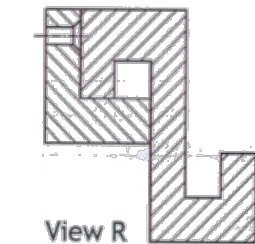
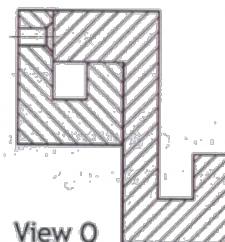
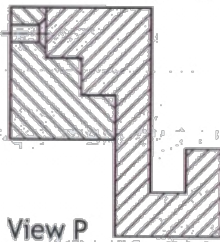
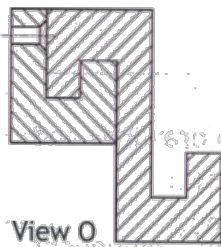
Wall hook assembly drawings



a Identify the sectional view below that matches section A-A above.

Section A-A is view _____

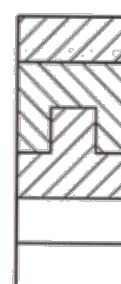
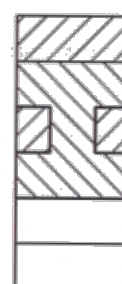
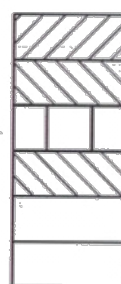
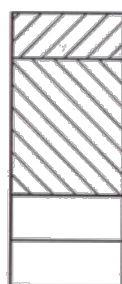
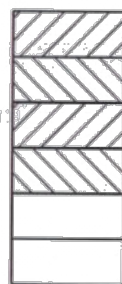
1



b 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

2

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

- a Describe one benefit that exploded views provide. 1

- b 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.

- c 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.

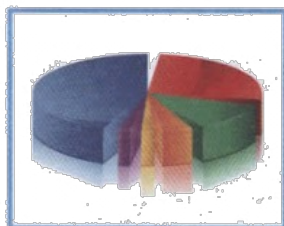
- d Describe the difference between assembly drawings and component drawings. 1

Component drawings are dimensioned to support manufacture.

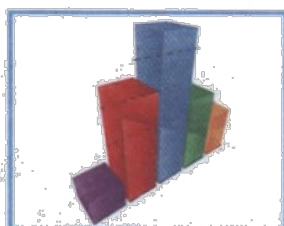
- e State why dimensions are added to component drawings and not to assembly drawings. 1

24

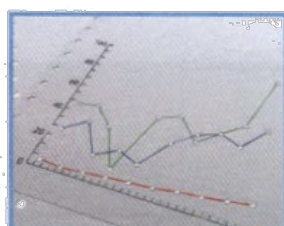
The four main types of information graphs and charts are shown below.



Pie chart



Bar graph



Line graph

Average Holiday Prices (in £)			
	Britain	Europe	America
Spring	1800	1600	2100
Summer	2200	2000	2400
Autumn	1700	1600	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

25

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

FLOOR PLAN-v1:0	
HOUSE NAME:	THE ROCKWELL
SCALE:	1:50
UNITS ARE IN M	
IF IN DOUBT, ASK!	
DRAWN BY:	CLARE HALLIDAY
APPROVED BY:	JOE MASON
DATE:	8TH 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

4

26

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



- a 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 _____

A graphic designer for a football magazine is commissioned to design a chart or graph. It should display the information in the table below in a visually stimulating and easy to read manner.

English Premier League players' average annual basic wages from 2000–2010	
<i>Season</i>	<i>Average annual basic wage</i>
2000–2001	£451,274
2001–2002	£566,932
2002–2003	£611,068
2003–2004	£651,222
2004–2005	£630,355
2005–2006	£685,748
2006–2007	£778,103
2007–2008	£960,377
2008–2009	£1,066,391
2009–2010	£1,162,350

- (a) State the most suitable type of chart or graph to use when presenting the information in the table above.

1

- (b) Explain **one** reason for using this type of chart or graph.

1

2

29

An advertising company has produced a promotional graphic to be used at a sports stadium. The graphic will be placed on the advertising boards around the pitch.

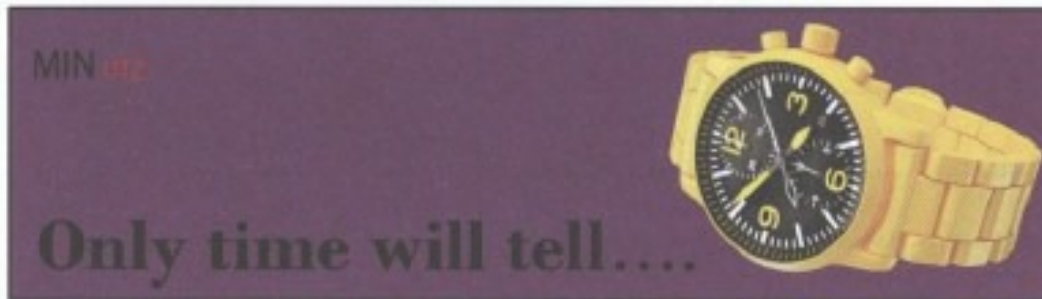
The initial layout is shown below.



Layout 1

- (a) State one instance where **harmony** has been used in layout 1. 1

The graphic artist has decided to change the background colour to violet as shown below.



Layout 2

- (b) (i) Explain a reason for changing the background colour to violet. 1

- (ii) State whether violet is an advancing or receding colour. 1

- (iii) Describe the effect the violet background colour has on the watch. 1

(continued)

The graphic artist wants to change the shade of violet used for the background colour as shown below.



Layout 3

(c) Explain how to create a shade of violet.

1

(d) Describe two examples of unity in layout 3.

2

Method 1 _____

Method 2 _____

(e) Describe how the desktop publishing technique 'bleed' has been used in layout 3.

1

(f) Describe how the desktop publishing technique 'reverse' has been used in layout 3.

1

29

(continued)

The owners of the sports stadium decide to show the advert on their electronic advertising boards.

(g) State two environmental benefits of advertising this way. 2

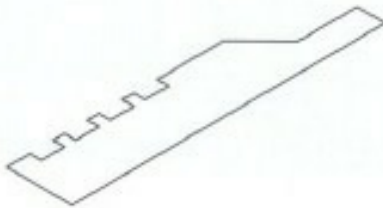
Benefit 1 _____

Benefit 2 _____

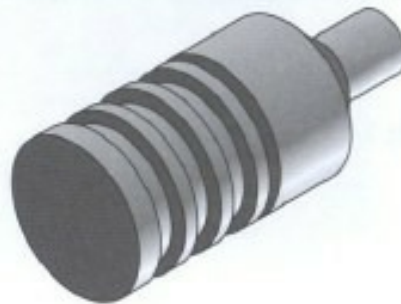
Two stages in the production of a 3D CAD model of a headphone connector are shown below.

Stage 1

Exam/Q3/2014



Before



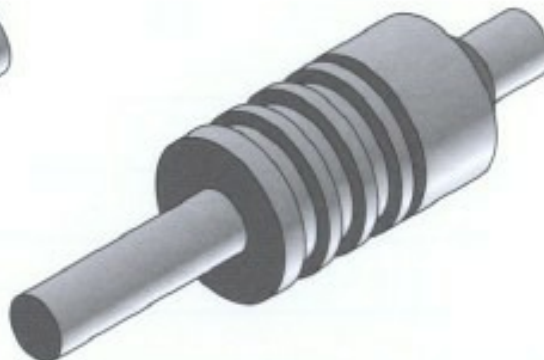
After

30

Stage 2



Before



After

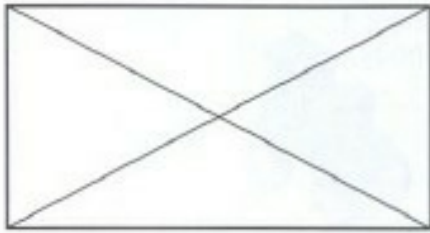
(a) State the name of the 3D modelling feature which has been used in Stage 1. 1

(b) State the name of the 3D modelling feature which has been used in Stage 2. 1

2

31

Two building symbols which are commonly found in sectional views of buildings are shown below.



Symbol 1



Symbol 2

State the name of:

2

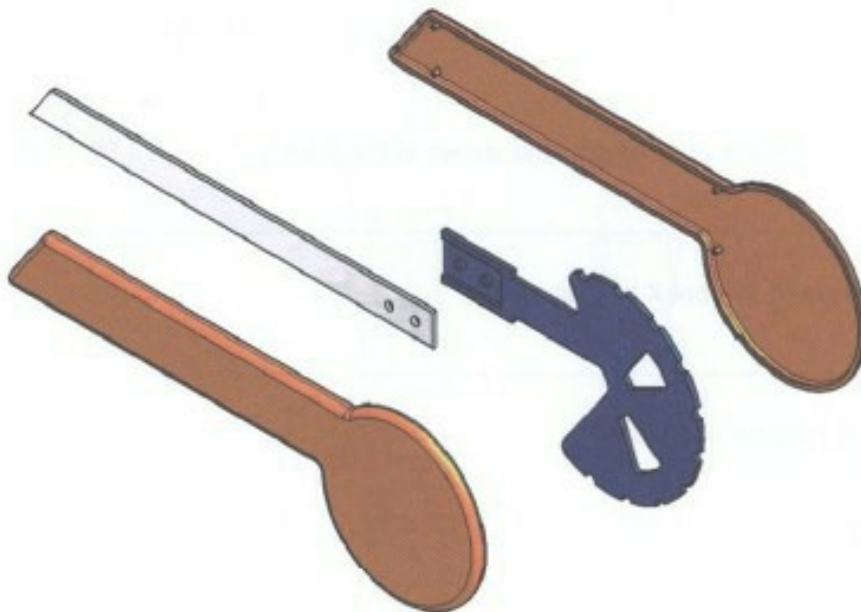
Symbol 1 _____

Symbol 2 _____

32

A 3D CAD model of a new craft knife design is shown below.

Exam/Q5/2014



State three disadvantages to a design company of using 3D modelling instead of traditional manual methods.

3

1 _____

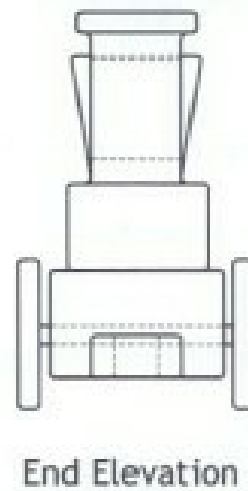
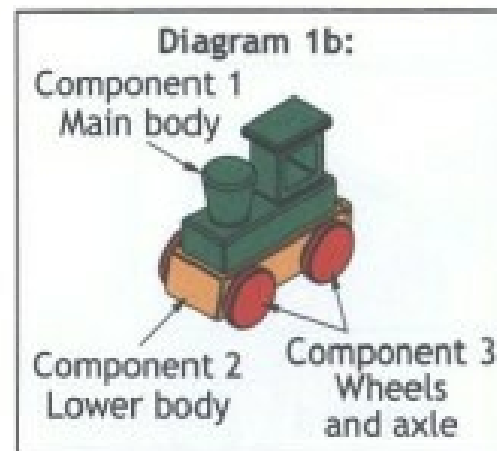
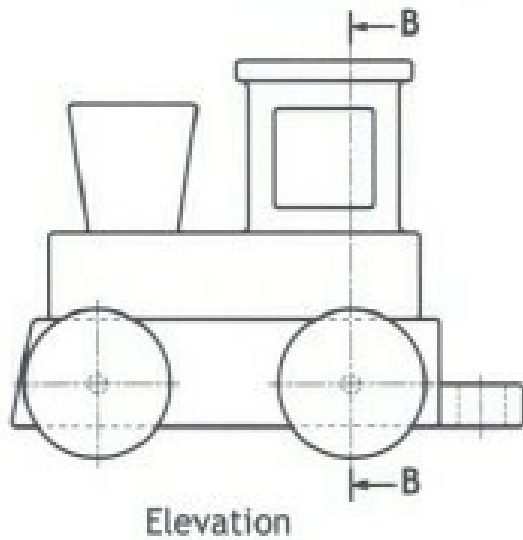
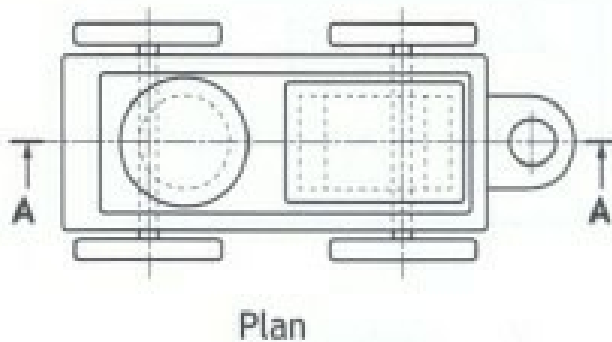
2 _____

3 _____

33

A variety of views of a child's wooden toy train are shown below.

Diagram 1a:



- (a) State the name of the type of drawing shown in Diagram 1a. 1

- (b) State the name of Symbol X in Diagram 1a. 1

- (c) Describe the purpose of Symbol X. 1

33

(continued)

MARKS

Four potential Sectional Elevations of the toy train views are shown below.

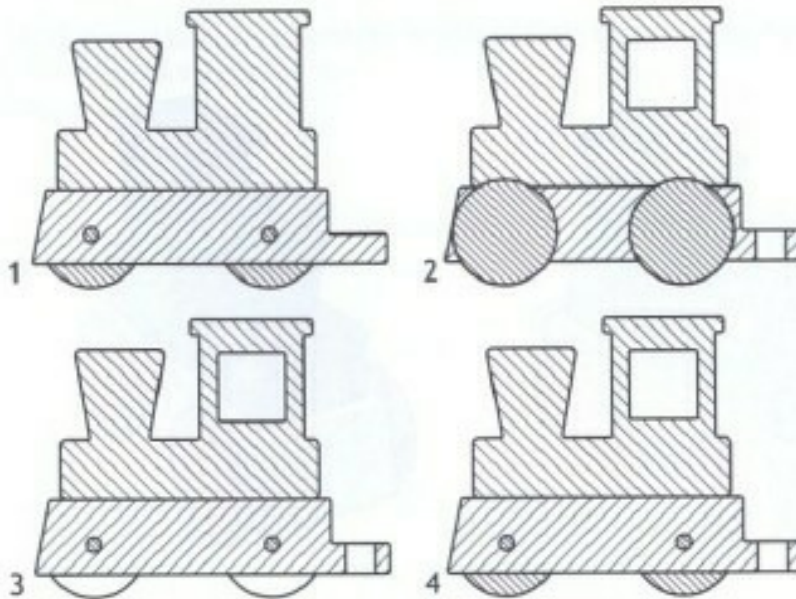


Diagram 2: Sectional Elevations on A–A

- (d) State, with reference to Diagram 1a and Diagram 2, the correct Sectional Elevation on A–A.

1

Four potential Sectional End Elevations of the toy train views are shown below

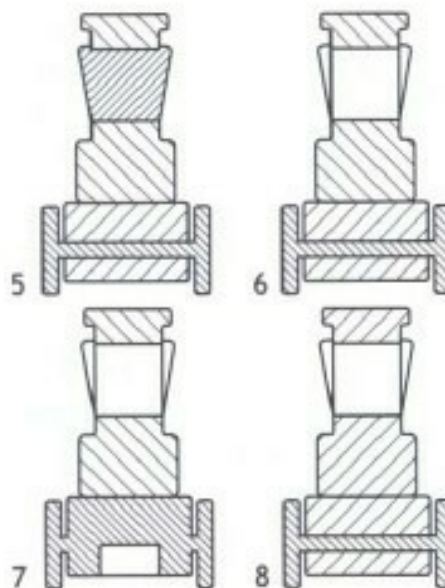


Diagram 3: Sectional End Elevations on B–B

- (e) State, with reference to Diagram 1a and Diagram 3, the correct Sectional End Elevation on B–B.

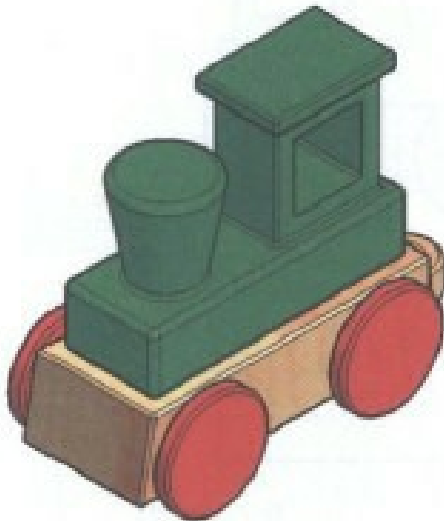
1

2

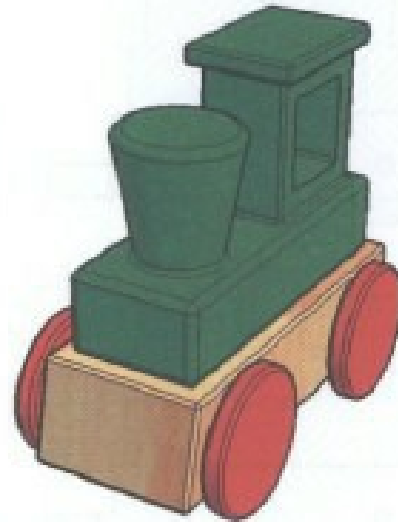
33

(continued)

Two pictorial views of the toy train are shown below.



View 1



View 2

(f) State the name of the pictorial view shown at:

(i) View 1

1

(ii) View 2

1

(g) State the name of another two types of pictorial views which would be suitable to show the train.

2

Pictorial type 1

Pictorial type 2

33

(continued)

A partial End Elevation complete with relevant dimensions (Diagram 4a) of the toy train is shown below. An End Elevation of the train track is shown (Diagram 4b).

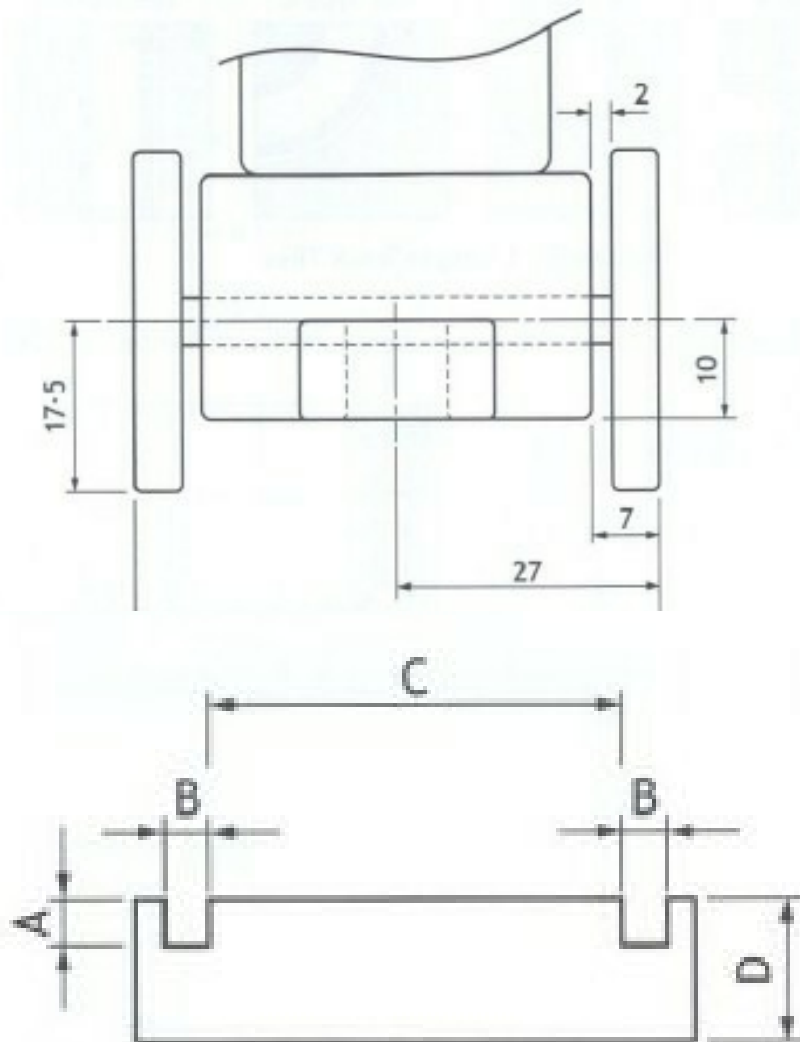


Diagram 4b: END ELEVATION of train track

(h) State, with reference to Diagram 4a and 4b, a dimension for:

- (i) A no larger than _____ 1
- (ii) B a minimum of _____ 1
- (iii) C exactly _____ 1
- (iv) D a minimum of _____ 1

4

(continued)

The train track can be made up with the four different track tiles shown in Diagram 5.

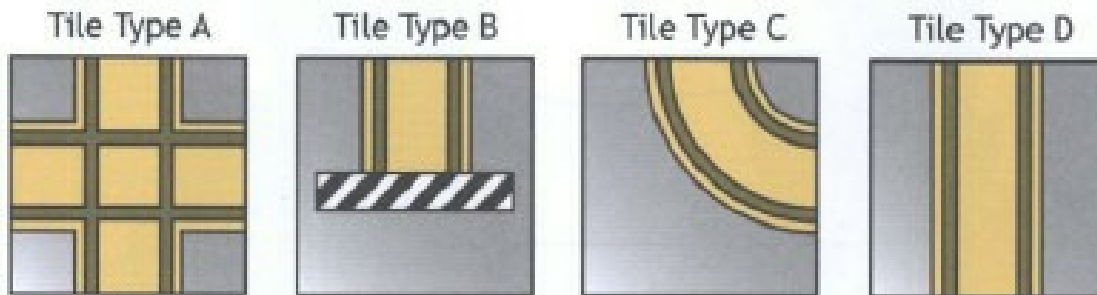


Diagram 5: Example Track Tiles

Diagram 6 shows a completed track layout using a minimum number of tiles.

Number of type A tiles:	<input type="text" value="0"/>	
Number of type B tiles:	<input type="text" value="0"/>	
Number of type C tiles:	<input type="text" value="1"/>	
Number of type D tiles:	<input type="text" value="3"/>	

Diagram 6: Completed Track Layout

33

(continued)

Three incomplete track designs are shown below.

(i) State, with reference to Diagrams 5 and 6, the minimum number of each type of track tile required for each track design.

(i) Track design 1:

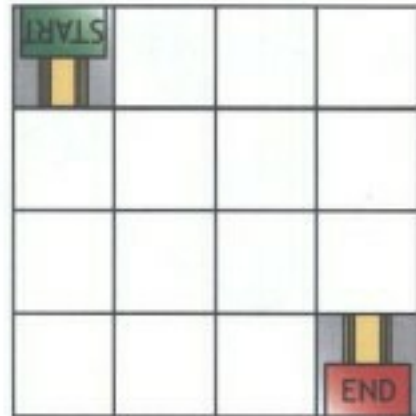
4

Number of type A tiles:

Number of type B tiles:

Number of type C tiles:

Number of type D tiles:



(ii) Track design 2:

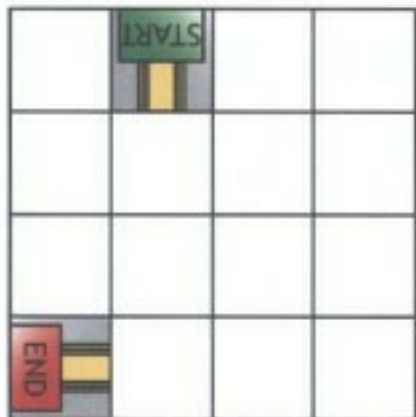
4

Number of type A tiles:

Number of type B tiles:

Number of type C tiles:

Number of type D tiles:



(iii) Track design 3 (your track must reach both END points):

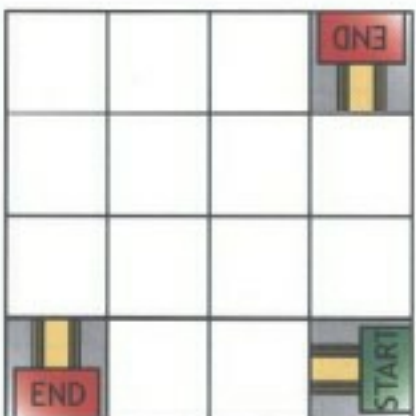
4

Number of type A tiles:

Number of type B tiles:

Number of type C tiles:

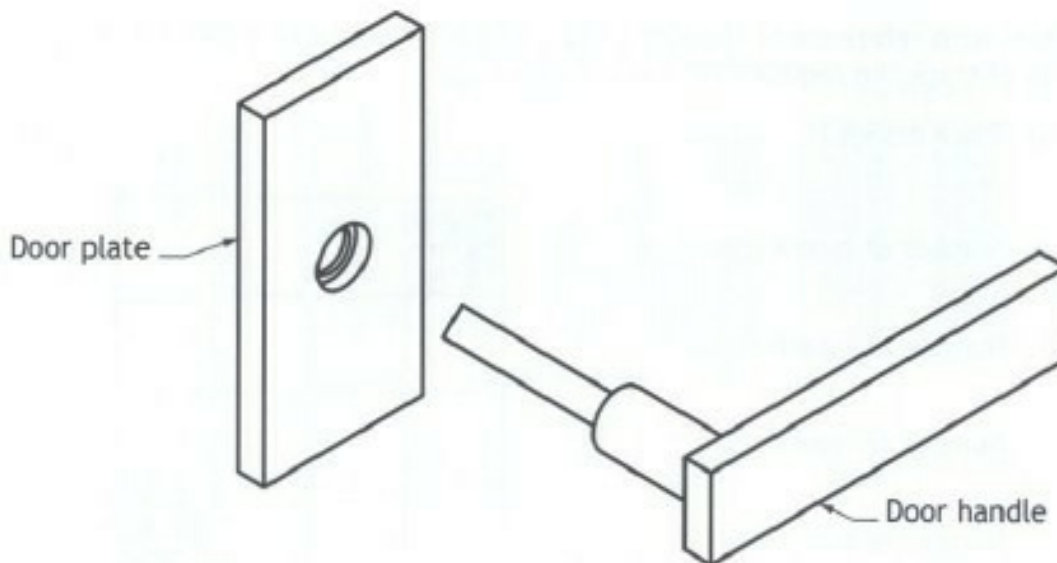
Number of type D tiles:



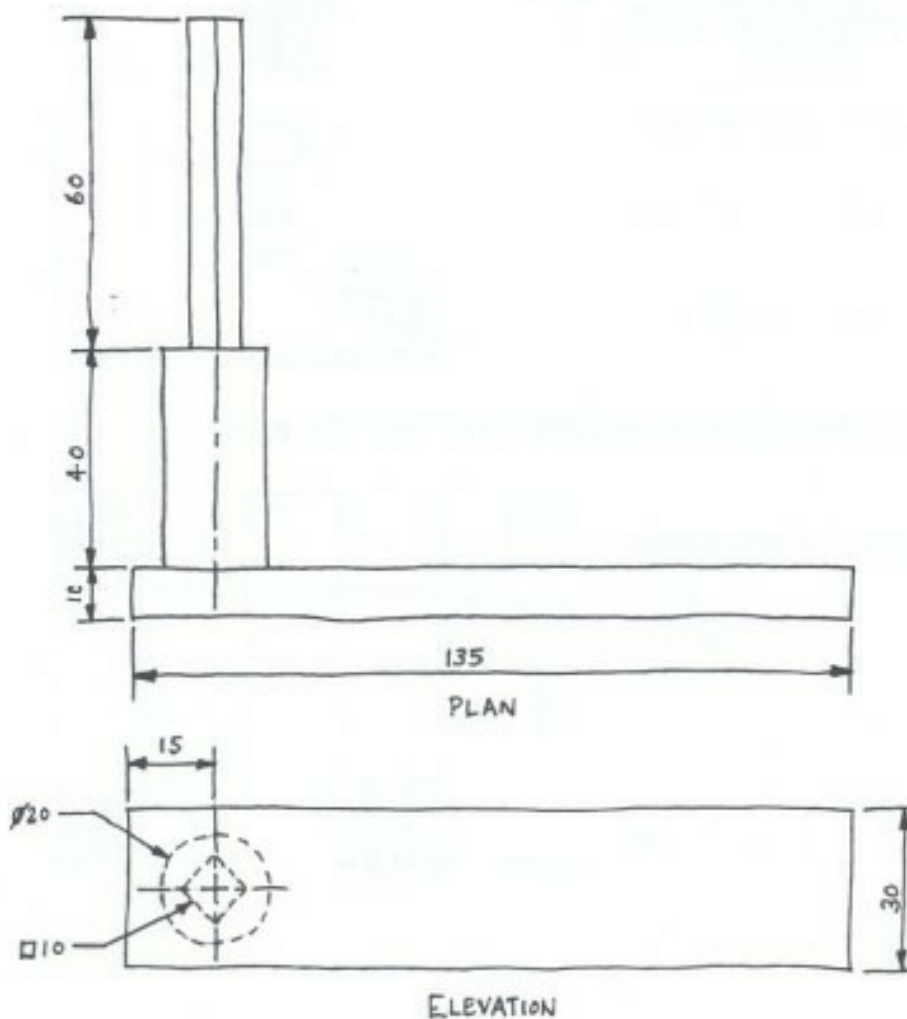
12

34

A door handle and door plate were designed using 3D modelling software. An exploded isometric view of the door handle and door plate is shown below.



A preliminary orthographic sketch of the door handle (not to scale) is shown below.



34

Extract information given on page 57

(continued)

A $\varnothing 20$ circle is sketched before the extrude command is used to create step 1.

- (a) State the length of the extrusion used in step 1.

Step 1

1



- (b) Describe, with reference to correct dimensions and 3D CAD modelling terms, how you would complete step 2 and step 3.

Step 2



Step 3



You may use sketches to support your answer.

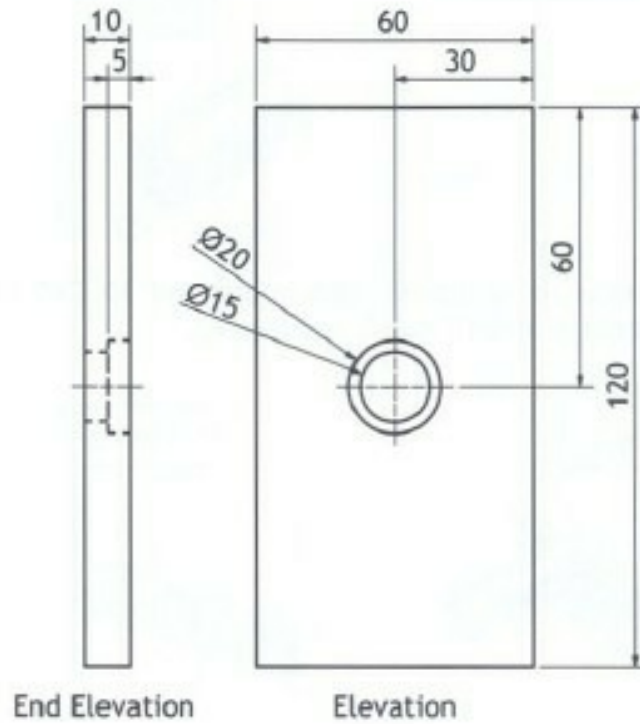
4

5

34

(continued)

The door plate is needed to secure the handle to the door. The production orthographic drawing (not to scale) for the door plate is shown below.



- (c) Describe, with reference to correct dimensions and 3D CAD modelling terms, how you would create the door plate.

You may use sketches to support your answer.

3

3

(continued)

In order to manufacture the door plate, the back of the plate is hollowed out as shown below.



- (d) State the name of the 3D modelling technique used to hollow the door plate. 1

- (e) State **three** advantages of computer aided drawing over manual drawing methods. 3

Advantage 1 _____

Advantage 2 _____

Advantage 3 _____

When producing the door plate the CAD command 'zoom' is used.

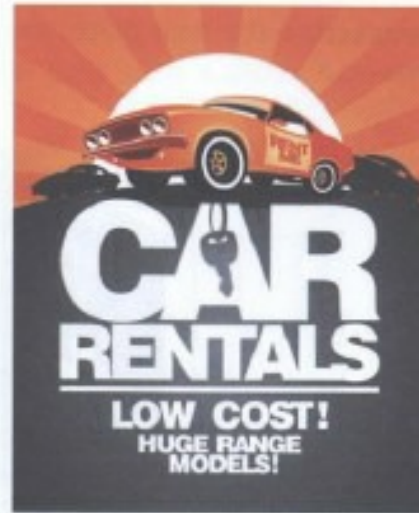
- (f) State one way in which the 'zoom' command would be useful. 1

35

Two graphic items A and B are shown below.

(a) Indicate, using a tick (✓), if Graphic Item A is:

- Preliminary
- Promotional
- Production

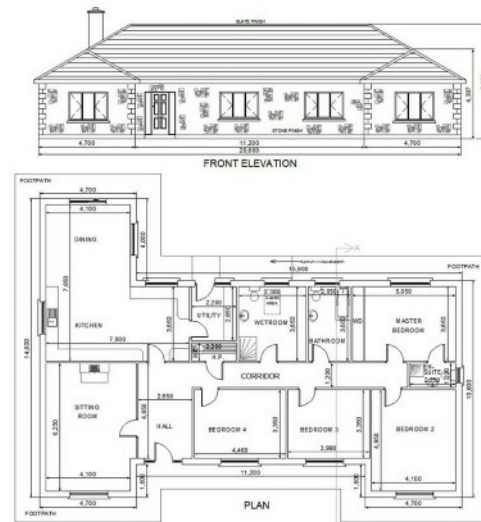


1

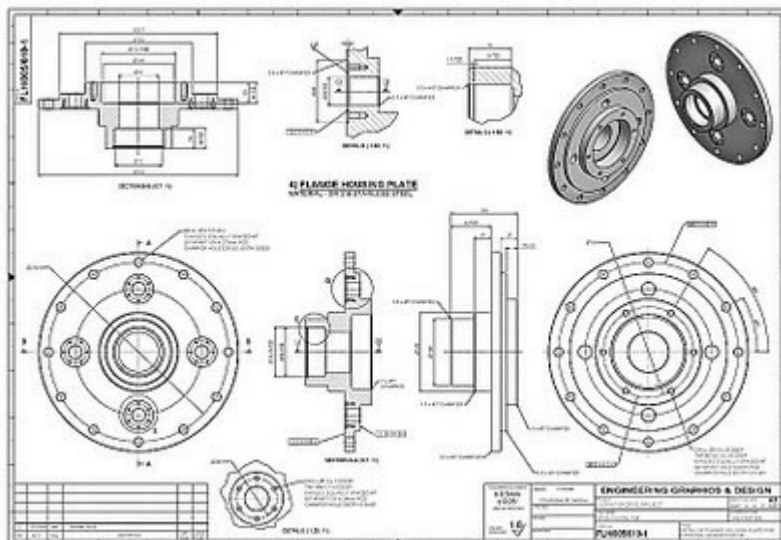
Graphic A

(b) Indicate, using a tick (✓), if Graphic Item B is:

- Preliminary
- Promotional
- Production



Graphic B



2

Graphic B

36

Zeus Electronics are promoting their new communicator, the L-COM. Their promotions team have drawn up two promotional layouts for consideration, shown below.

L-COM Promotional layout 1



L-COM Promotional layout 2



Layout 1 was produced first. DTP edits were then made to some of the items to create layout 2.

- (a) State the names of the DTP edits used to change the following items between layout 1 and layout 2.

4

The L-COM product name

DTP edit _____

The slogan ('A NEW DAWN ...' etc.)

DTP edit _____

The body text

DTP edit _____

The image of the L-COM product

DTP edit _____

4

36

(continued)

It is important to create unity in a layout in order to hold the layout together and improve visual impact.

- (b) Describe two ways in which the graphic designer has created unity in layout 2. 2

In both layouts the product image of the L-COM communicator is the dominant item in the layout.

- (c) Explain two things the graphic designer has done to make the product image the dominant item. 2

The graphic designer felt it was important to include eye-catching contrast in the layouts. One way he achieved this was through the use of colour.

- (d) State two other ways in which the graphic designer has created contrast in the layouts. 2

The yellow and orange flash-bar behind the layout has been changed in layout 2 to create a style of balance that offers more visual impact.

- (e) State the style of balance achieved by the change. 1

(continued)

The red line in layout 2 is carefully chosen and positioned to enhance the layout.

- (f) Describe one way in which the red line benefits layout 2 (do not repeat a previous answer). 1

The web address and the 'World Electronics' text are placed in the spaces at the top and bottom of the layouts.

- (g) State the names given to these spaces in a layout. 2

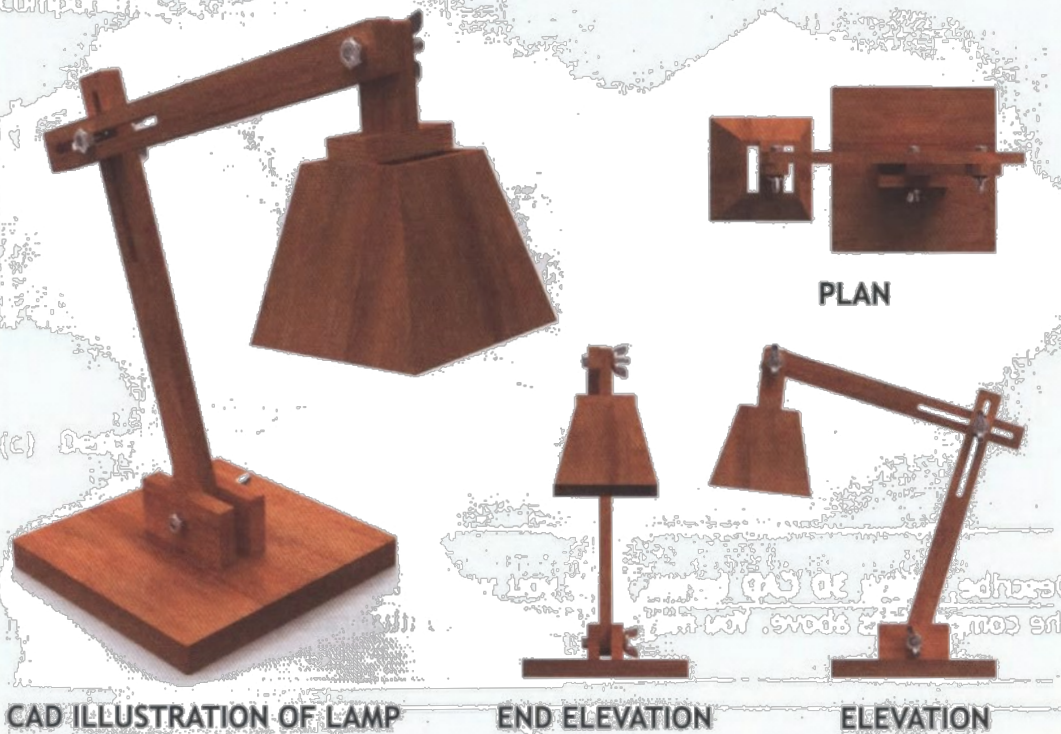
Space at the top _____

Space at the bottom _____

- (h) State the name of the DTP feature applied to the web address in layout 1. 1

37

A furniture company wants to expand its range of desk lights and has employed a design engineer to create a new flat-pack version. The design engineer used 3D CAD to illustrate her proposal.



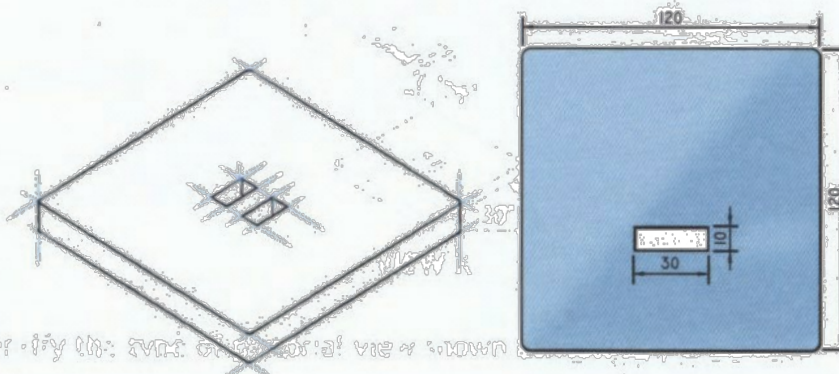
CAD ILLUSTRATION OF LAMP

END ELEVATION

ELEVATION

The design engineer used the extrude command to make the base of the lamp. The base of the lamp requires two rectangular holes, identical in size and accurately centred on the base, to allow the vertical components to fit in.

An incomplete profile with one rectangle correctly in place is shown below.



SKETCH OF PART

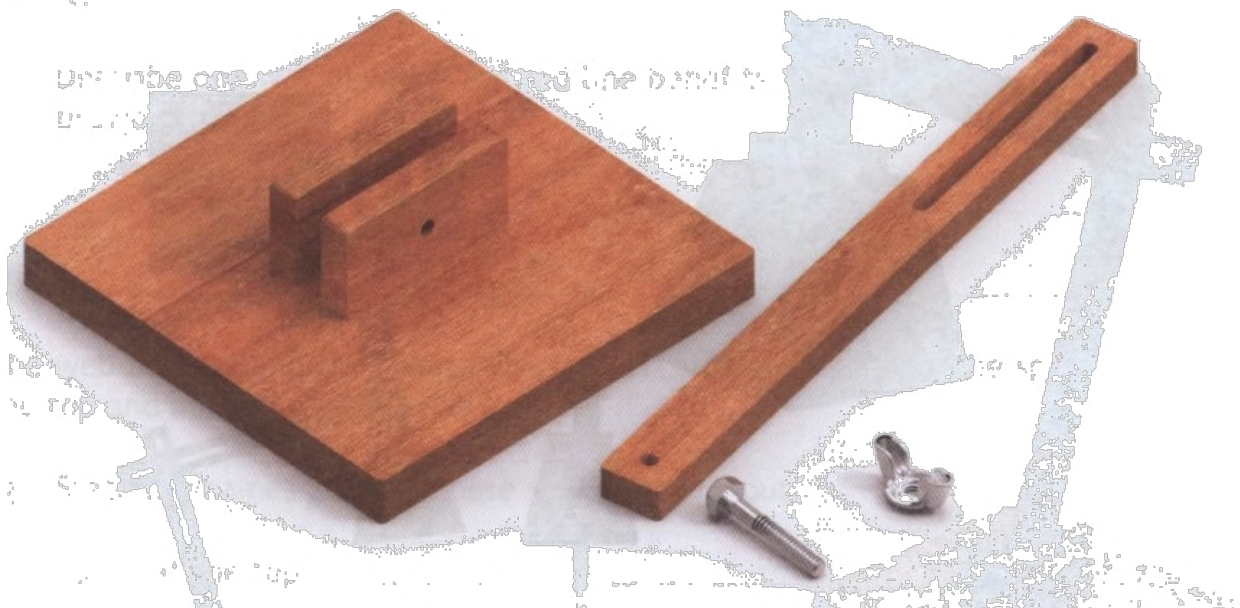
INCOMPLETE PROFILE

(a) Describe how the second hole can be drawn on the incomplete profile using only the information shown here. You may sketch directly onto the incomplete profile to help explain your answer.

2

37

(continued) A range of CAD components are illustrated below.



(b) Describe, using 3D CAD terms, how you would assemble and constrain the components above. You may use sketches to illustrate your answer. 4

4

37

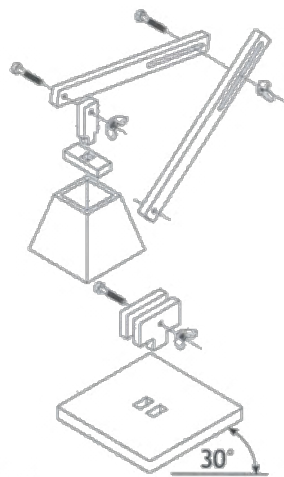
(continued)

The bolt and the wing-nut were loaded from a 3D CAD library of standard components.



(c) Describe two benefits of a CAD library of standard components.

2



VIEW X

(d) Identify the type of pictorial view shown at view X.

1

(e) Explain how view X can be used to support a customer.

1

4

37

(continued)

Two illustrated versions of the lamp are shown below.



The design engineer illustrated the 3D CAD model by applying different materials. This tested the appearance of the lamp in different materials and colours.

(f) Describe two other ways the 3D CAD model can be used to test the design of the lamp.

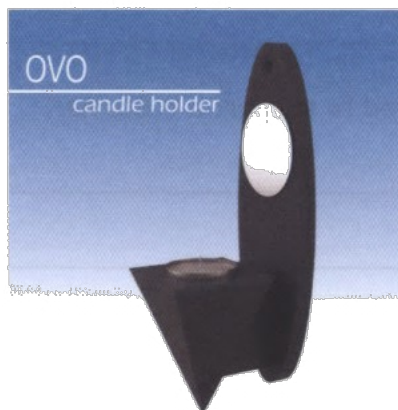
2

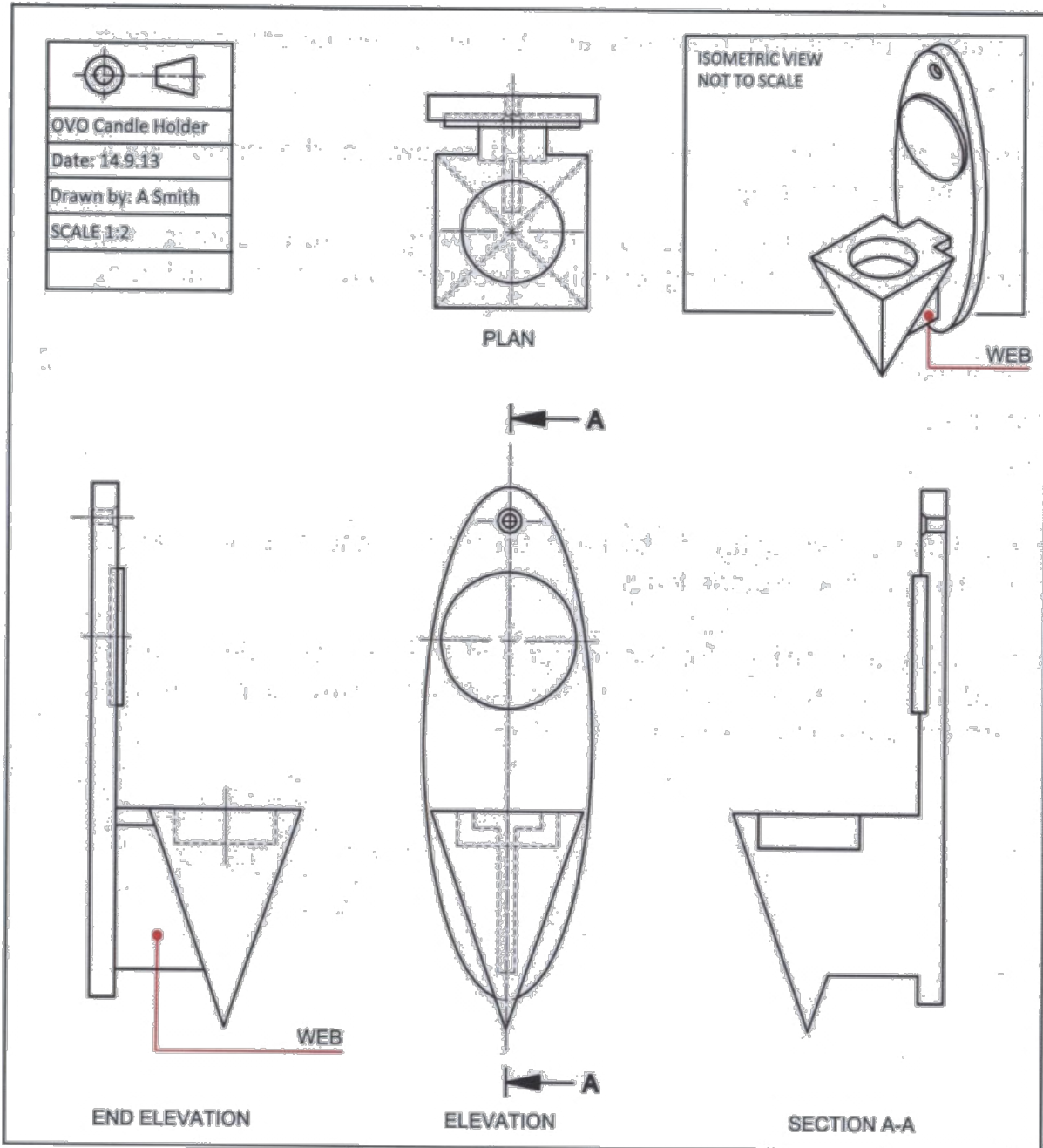
2

40

Images and orthographic production drawings of a new candle holder are shown on P66. It is being marketed as the OVO Candle Holder.

The OVO Candle Holder is a single component and has a second component, the mirror, added. It is not sold with the tea-light candle and the drawings below do not include a tea-light candle.





The view of section A-A is incomplete.

- (a) Complete the view of section A-A by applying British Standards conventions and adding relevant features. You should sketch or draw the missing features directly onto the incomplete section A-A or you may annotate section A-A to describe your answer.

7

(continued)

The orthographic production drawings are to be dimensioned to support manufacture.

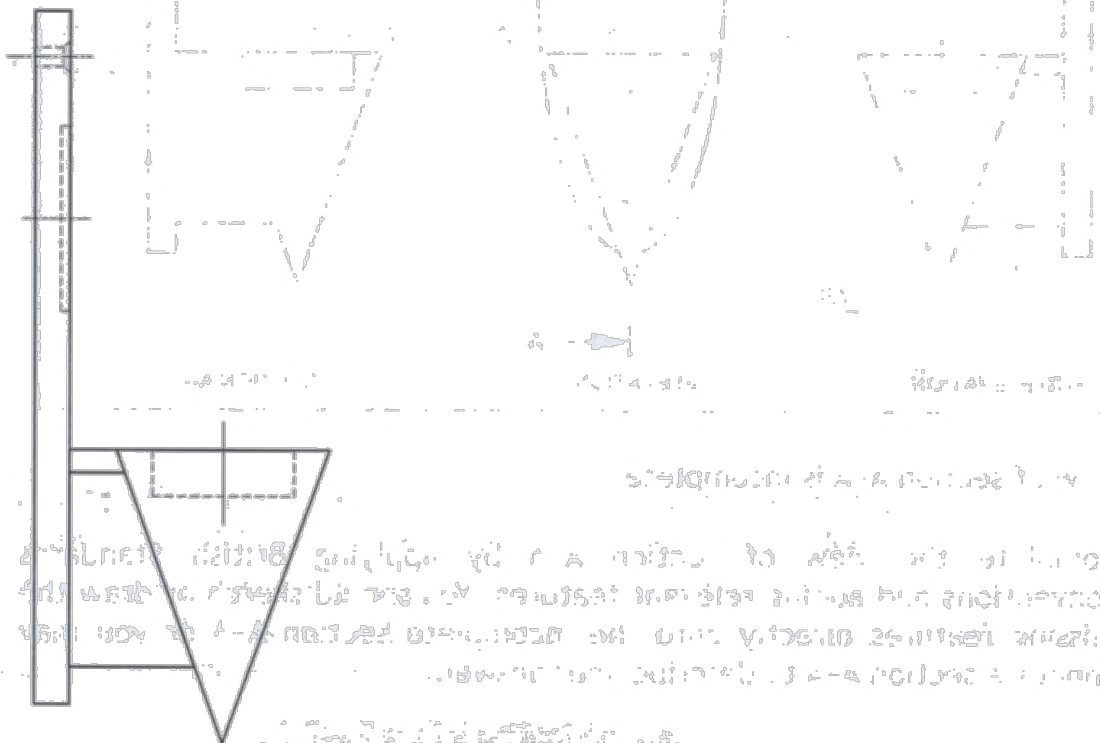
(b) Add three dimensions, of the types listed below, to the orthographic views on the previous page.

Measure three suitable sizes on the drawings before adding the dimensions, correctly applying British Standards conventions, including scale.

- One length 2
- One breadth 2
- One diameter 2

The end elevation shown below is to have the mirror and tea-light candle added in an orthographic exploded view.

(d) Indicate suitable positions for the mirror and the tea-light candle in the exploded end elevation below. You may sketch or draw your answer or annotate the drawing to explain your answer. 2



EXPLODED END ELEVATION

39

A company who specialise in scale model construction kits and wooden toys have produced two promotional adverts. The adverts will be used to promote the company to different target markets.

The first advert is aimed at a target market comprising:

Gender Male and female
 Age 8–12 years and their parents
 Interests Toys and creative play
 TV influences Cartoons and children's programmes

The second advert focuses on a target market comprising:

Gender Male
 Age 35–65 years
 Interests Crafts and modelling
 TV influences Home improvement shows

The advertisement is split into two vertical panels. The left panel has a yellow background and features the word 'Jackson' in red, stylized letters. Below the name is a photograph of a young girl with braided hair sitting at a table, playing with a wooden toy house. The right panel has a blue background and features the word 'Woodstuff' in red, stylized letters. Below the name are images of a wooden swing set with a red slide, a colorful wooden train, and a wooden toy truck. At the top of both panels, there are colorful alphabet blocks. At the bottom of the left panel, the text reads 'Wooden toys for a safe, natural and creative childhood playtime'. At the bottom of the right panel, the website 'www.woodstuff.com' is listed.

Advert 1

The advertisement has a brown, textured background. At the top, the words 'Jackson Woodstuff' are written in a large, black, serif font, with a decorative flourish above them. On the left side, there is a photograph of a man wearing a white hard hat and a dark jacket, smiling as he works on a scale model of a house inside a cardboard box. To the right of this photo are three small square images: a model of a building, a model of a house with a roof, and a model of a bicycle. Below these images are the labels 'Buildings', 'Models', and 'Toys' respectively. On the far right, there is a photograph of a silver multi-tool kit. Below the multi-tool kit, the text reads 'Get a free multi-tool kit with your first order'. At the bottom right corner, the website 'www.woodstuff.com' is listed.

Advert 2

Extract information from previous page

(continued)

Advert 1 makes use of the colour red in the company name.

(a) State whether red is an advancing or a receding colour. 1

(b) Describe the effect this colour has on the title in the layout of advert 1. 1

(c) Explain why the colours used in the layout of advert 2 were chosen. 1

The two adverts use very different font styles in the company name.

With reference to the font styles:

(d) Explain why the different fonts are considered suitable for each advert.

Advert 1: Font Style Kristen ITC 1

Advert 2: Font style Batang 1

The company chose not to print their promotional adverts. Instead, they sent them to potential customers using email.

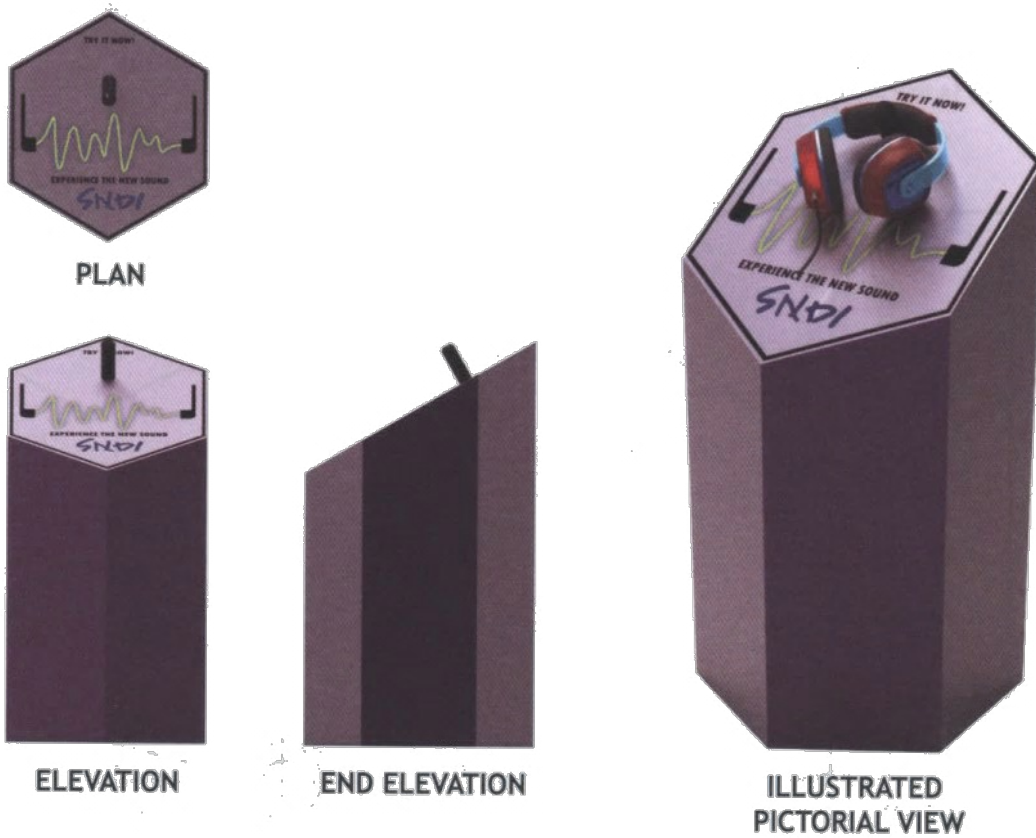
(e) Describe one advantage and one disadvantage of this marketing approach.

Advantage _____ 1

Disadvantage _____ 1

40

A new set of headphones have been released by SND1. To promote their new headphones, SND1 have employed a graphic designer to create a new display stand. The display stand will be made from sheet metal. 3D CAD illustrations and orthographic views of the design are shown below.



The graphic designer chose to make a 3D CAD model rather than a full-size card prototype of the display stand.

- (a) Give two reasons why a 3D CAD model was more suitable than the card prototype. 2

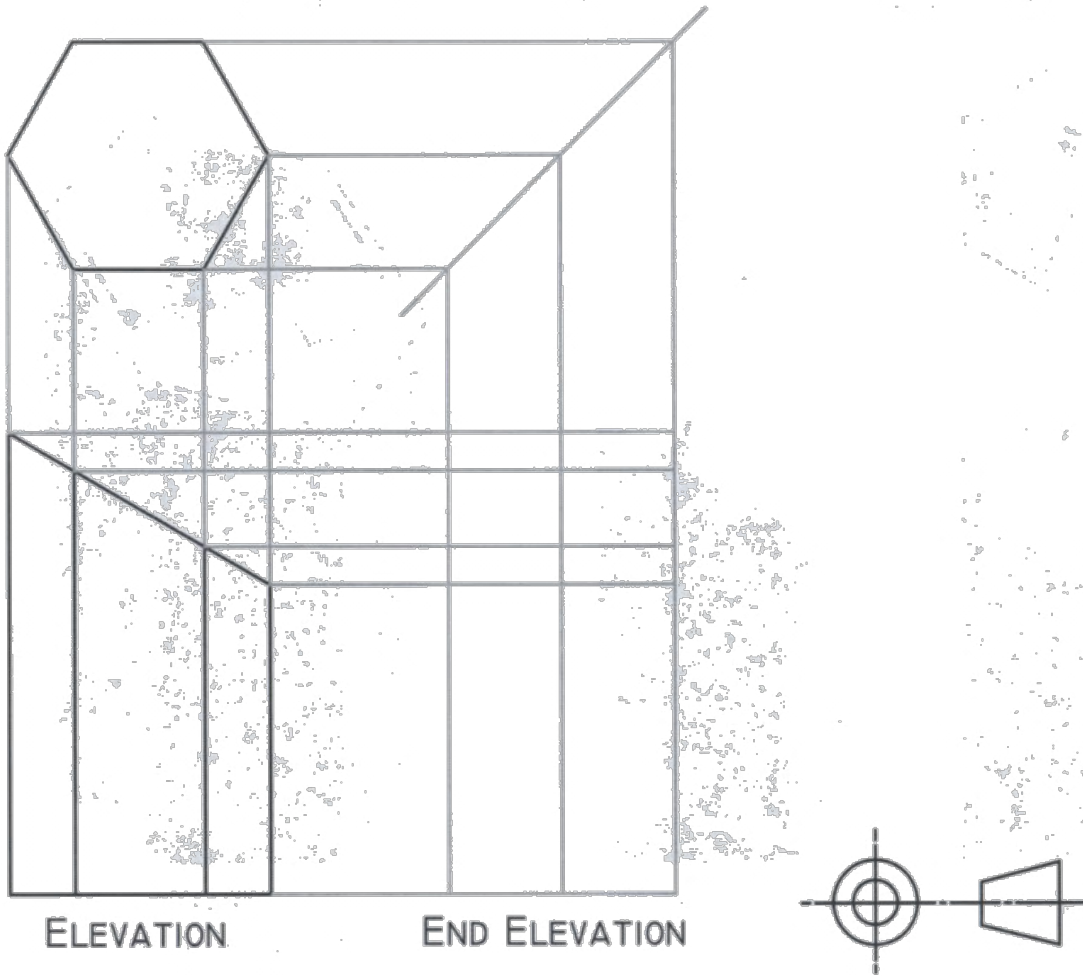
The graphic designer gave the illustration to a CAD engineer, including key information about the display stand. One piece of information stated: A/C 400mm.

- (b) Explain the term 'A/C' and how it is used to draw this product. 2

41

(continued)

The graphic designer initially only made the illustrated pictorial view of the stand. The CAD engineer created the orthographic views shown below.



- (c) Give two reasons why the CAD engineer would produce orthographic views of the display stand. 2

- (d) Complete the end elevation shown above by plotting the edges on the surface generators. You may sketch or draw lines or plot corner points. Do not include hidden detail. 4

6

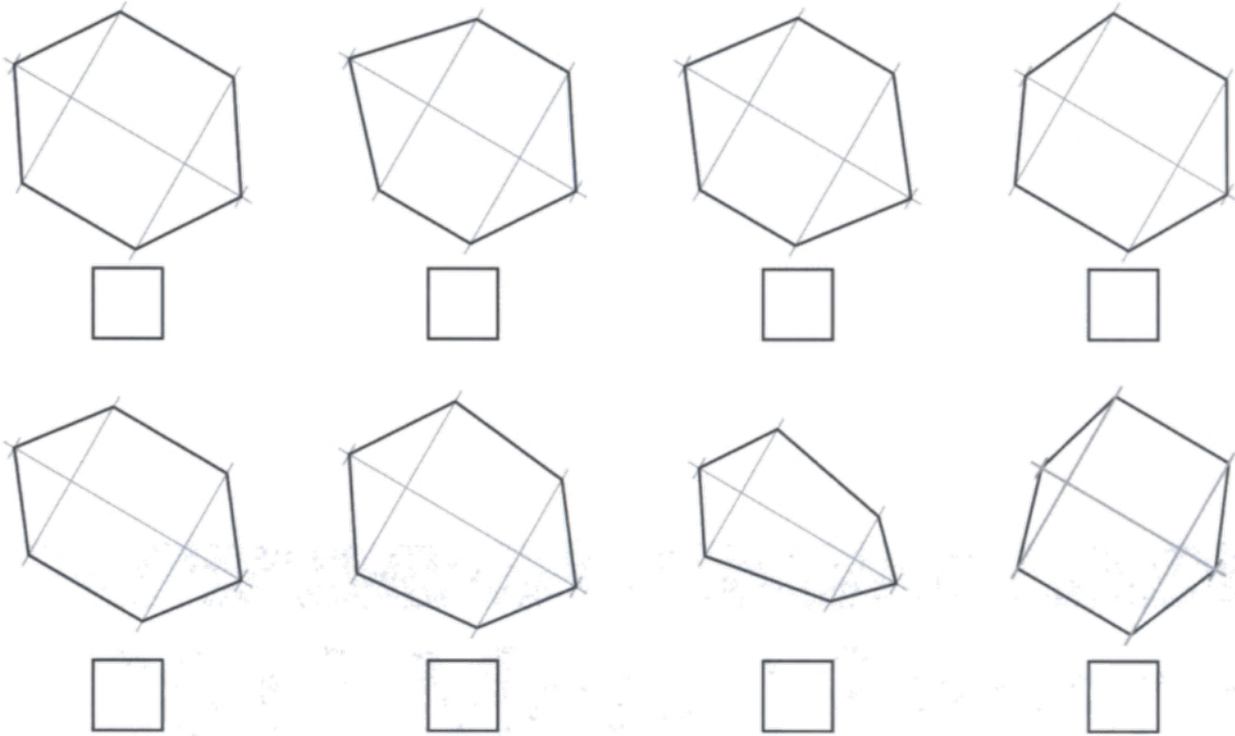
41

(continued)

The graphic designer used 2D CAD software to generate the true shape of the sloping face of the hexagonal prism.

(e) Identify the correct true shape by ticking a box below.

1



1

42

43