



National
Qualifications

Mark

Graphic Communication

Date — December 2013

Duration — 1 hour and 30 minutes

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Number of seat

Date of birth

Day

Month

Year

D	D
---	---

M	M
---	---

Y	Y
---	---

Scottish candidate number

--	--	--	--	--	--	--	--	--	--

Total marks — 60

Attempt ALL questions.

All dimensions are in mm.

All technical sketches and drawings use third angle projection.

You may use rulers, compasses or trammels for measuring.

Use **blue** or **black** ink.

Before leaving the examination room you must give this booklet to the Invigilator.

If you do not, you may lose all the marks for this paper.

MARKS

___/60, ___%



Q1. A graphic designer has produced promotional layouts for a new perfume.

Marks

- (a) In **Layout 1** the designer has used alignment and has created dominant features. Describe an instance where each of these principles have been used and the effect each has on the layout.

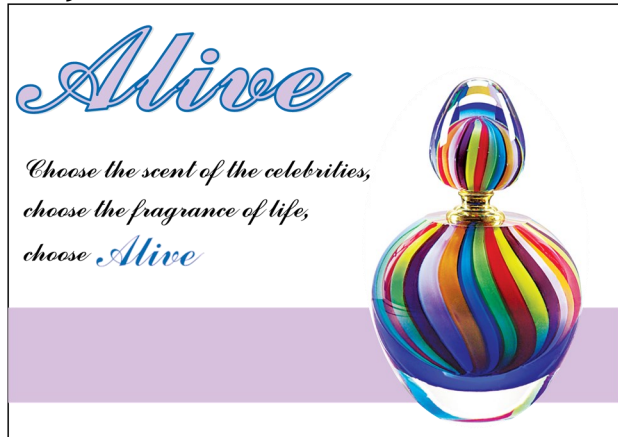
Alignment

Effect

Dominance

Effect

Layout 1



1
0

1
0

1
0

1
0

- (b) A light tint of violet has been used for the flash bar in **Layout 1**.

- (i) State whether this tint is advancing or receding.

1
0

- (ii) Describe the effect that the flash bar and its colour has on the layout.

1
0

- (c) The designer has decided to change the title colour making the outline and fill colours contrast. If the outline of the title was left blue suggest a contrasting colour that could be used for the fill.

1
0

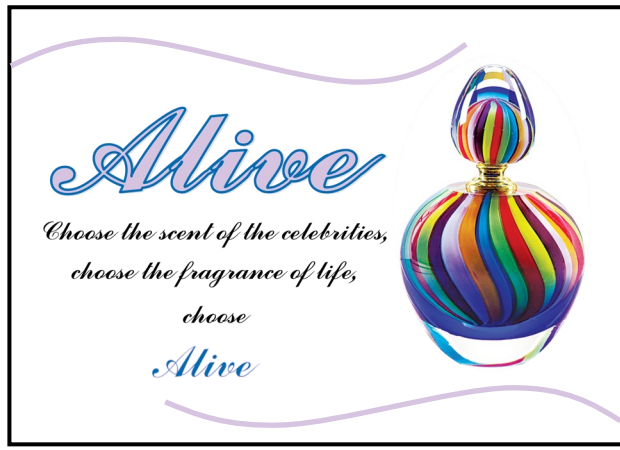
Q1. cont.

(d) In **Layout 2** the designer has created unity. Describe two ways in which they have done this.

Layout 2

- 1. _____

- 2. _____



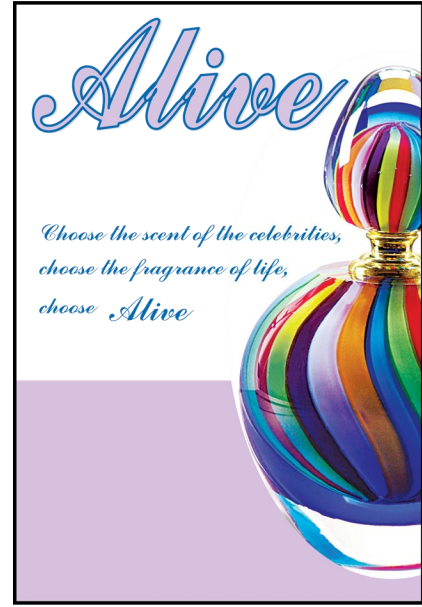
2
1
0

(e) Suggest a reason why the designer has placed the bottle off-centre in **Layout 2**?

1
0

Layout 3

(f) In **Layout 3** state the name of the edit that has been used on the image of the perfume bottle.



1
0

(g) State two advantages of using DTP software to create layouts/adverts.

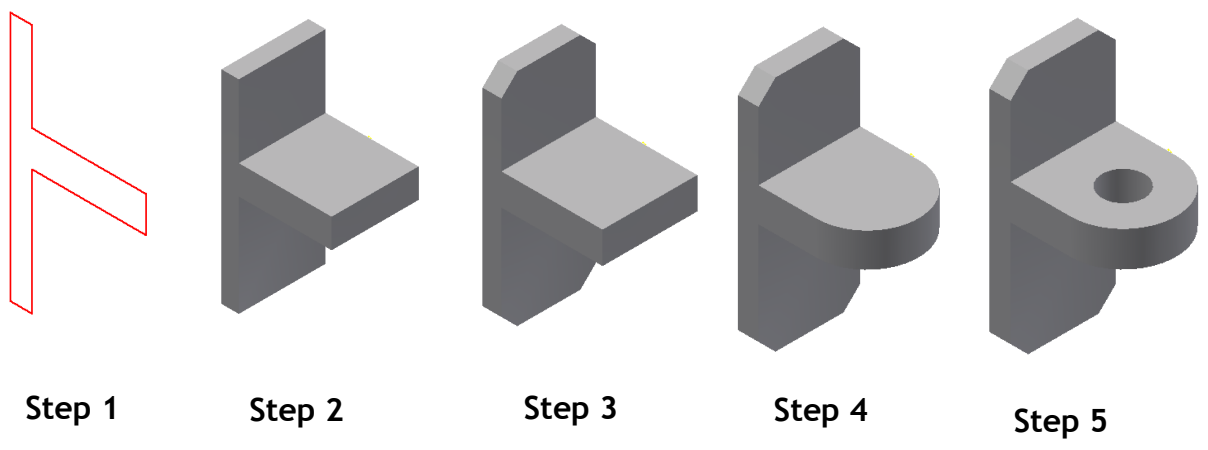
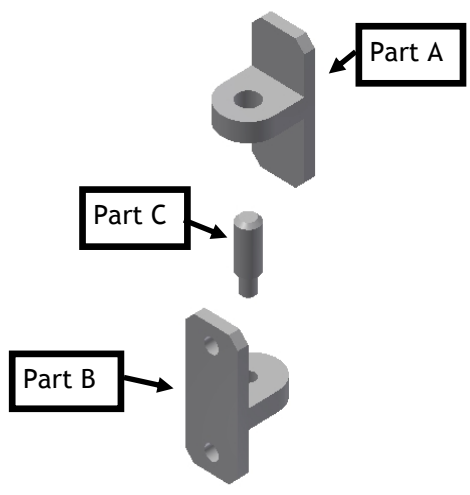
- (i) _____
- (ii) _____

2
1
0

Q2. A hinge is designed to connect a gate to a fence post.

An exploded pictorial view of the hinge is shown to the right along with preliminary sketches on the following page.

The profile of Part A, shown in **Step 1**, was drawn using 3D modelling software to the sizes given in the preliminary sketches. The 'Extrude' command is used to make the profile in Step 1 into the 3D model shown in Step 2.



(a) State the size of the extrusion used in Step 2.

The completed 3D Model is shown in Step 5.

(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 4 to Step 5.

You may use sketches to support your answer.

1

0

3

2

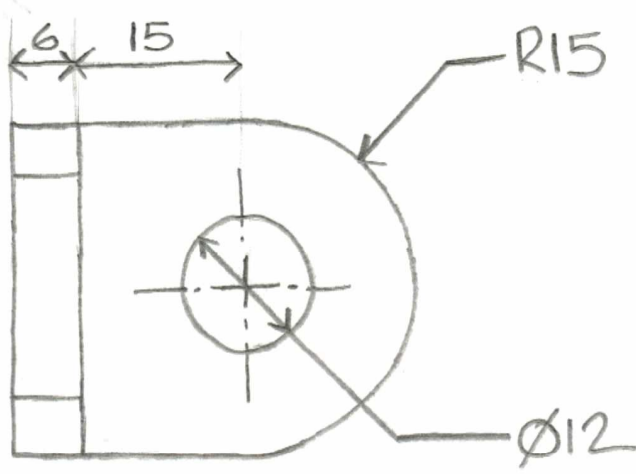
1

0

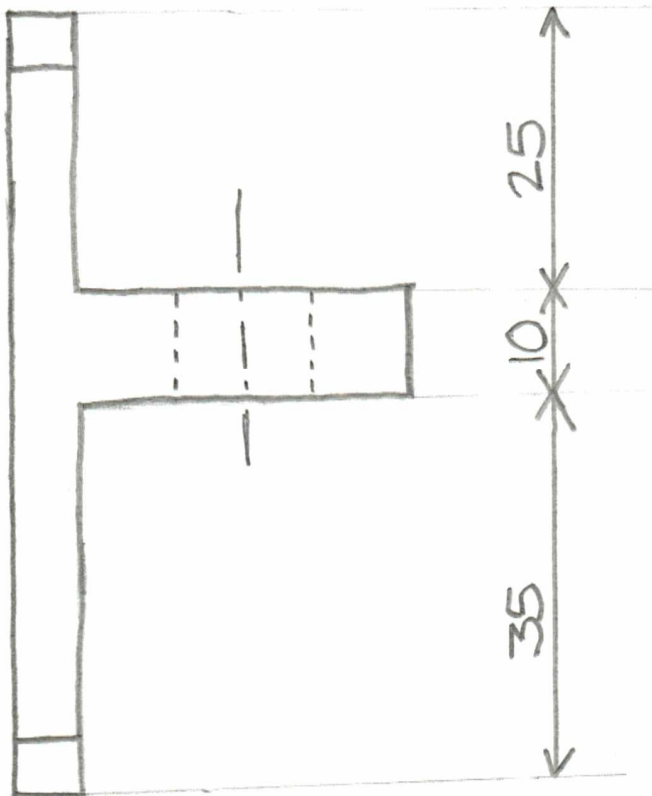
Q2. cont.

Marks

Figure—Preliminary sketch of bracket.



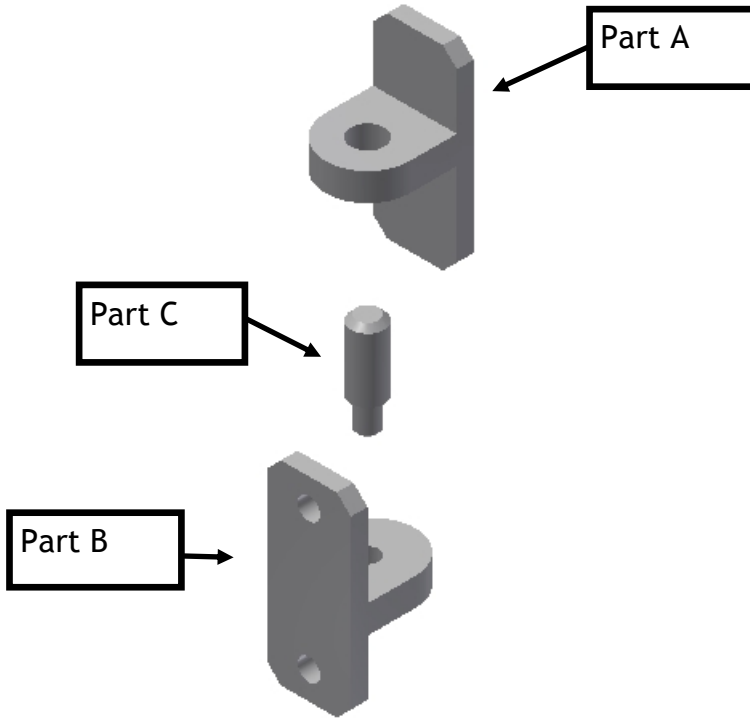
PLAN



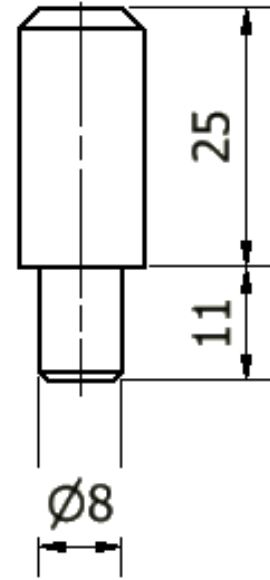
ELEVATION

Q2. cont.

A pin (Part C) is needed to ensure that both parts of the hinge are lined up correctly. This pin must not fall through the bottom bracket (Part B) and should allow for Part A to slot over the top of it. See the figure below.



Exploded 3D model of hinge



Suggested form for pin

C) Describe, with reference to dimensions and CAD modelling terms, how to produce a 3D CAD model of a pin that will slot in Part B and allow for Part A to slot over. The hole in Part B is $\varnothing 8$.

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

You may use sketches to support your answer.

Marks

5
4
3
2
1
0

Q2. cont.

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

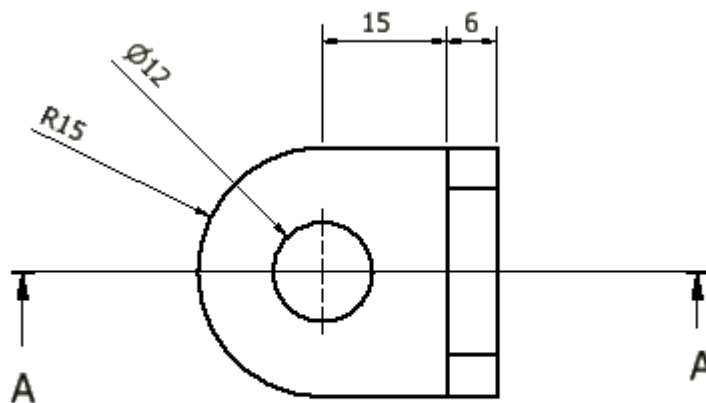
There are errors in the drawing.

(d) State two errors in the production drawing.

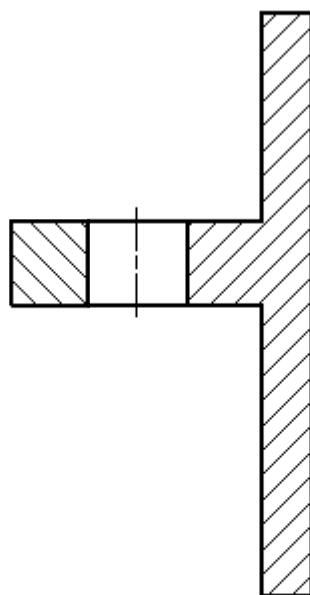
You may annotate the drawing to support your answer.

(i) _____

(ii) _____



PLAN



SECTION A:A

Marks

2

1

0

[11]

Q3. Using CAD software to produce new lamp designs has many advantages over manual methods. **Speed of production and accuracy** are two of these.

(a) State **three other** advantages of using CAD software when producing these designs.

1 _____

2 _____

3 _____

Hardware and software costs are two disadvantages of CAD.

(b) State **two other** disadvantages of CAD when producing these designs.

1 _____

2 _____



Marks

3

2

1

0

2

1

0

[5]

Q4. A company that sells washing machines is celebrating a successful year. They have excellent sales figures and want to use them to promote their success. A graphic designer has been asked to produce graphs or charts that make the sales figures more visual.



Marks

The sales figures are shown below.

Sales Figure A	
Sales of each brand in 2012 by percentage	
Siemens	13%
Beko	28%
Zanuzzi	32%
Indesit	20%
Hotpoint	7%

Sales Figure B	
Monthly sales in 2012	
Month	No. Of Sales
Jan	1,100
Feb	900
Mar	1,500
Apr	2,100
May	500
Jun	750
Jul	1,300
Aug	1,050
Sept	690
Oct	1,200
Nov	800
Dec	1,650

Question based on Sales figures A:

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

1

ii) State one reason for using this type of graph or chart

0

1

0

Question based on Sales figures B:

i) State the best type of graph or chart to use when presenting Sales figures B.

1

0

ii) State one reason for using this type of graph or chart

1

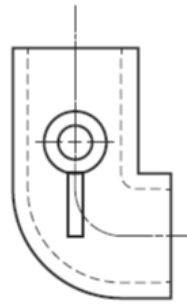
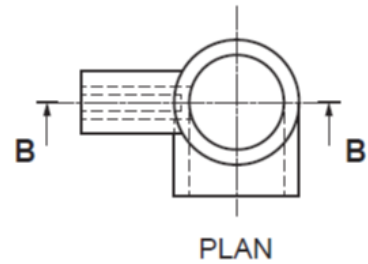
0

[4]

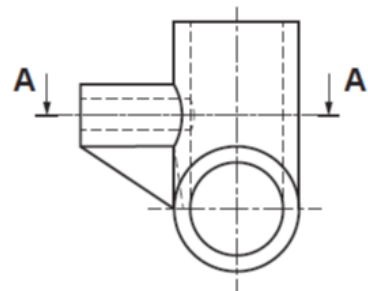
Q5. The elevation, end elevation and plan of a pipe are shown in Drawing X.

Six pictorial views are shown below.

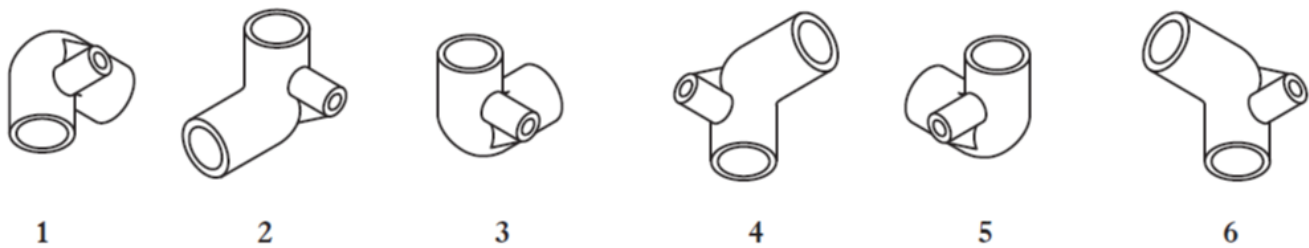
Drawing X



END ELEVATION



FRONT ELEVATION



(a) State which **two** of the pictorial views 1 to 6 above represent the pipe elbow shown in Drawing X.

Answer 1 _____ Answer 2 _____

(b) State the name given to these types of pictorial view.

Answer _____

(c) State the name given to the type of drawing shown in **Drawing X**

Drawing _____

Marks

2

1

0

1

0

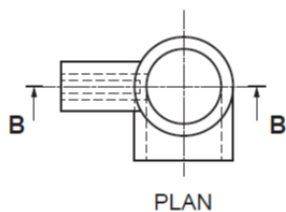
1

0

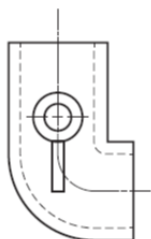
Q5. cont.

Marks

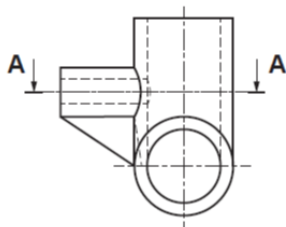
Drawing X



PLAN

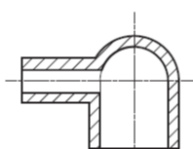


END ELEVATION

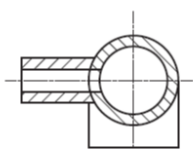


FRONT ELEVATION

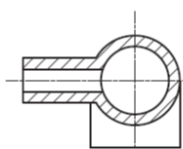
Eight sectional views 7 to 14 are shown below.



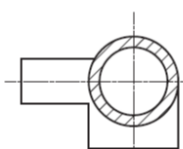
7



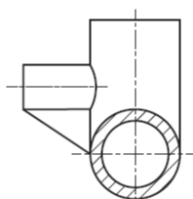
8



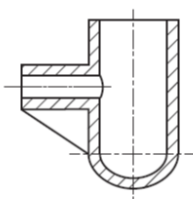
9



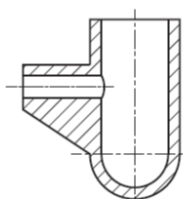
10



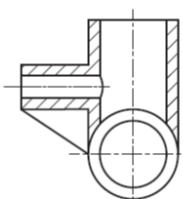
11



12



13



14

(d) State which two are correct sections of the pipe elbow.

Section AA _____ Section BB _____

2

1

0

(d) State two factors that effect the scale of a drawing.

Answer 1 _____

2

1

Answer 2 _____

0

[8]

Question 6 Information Sheet

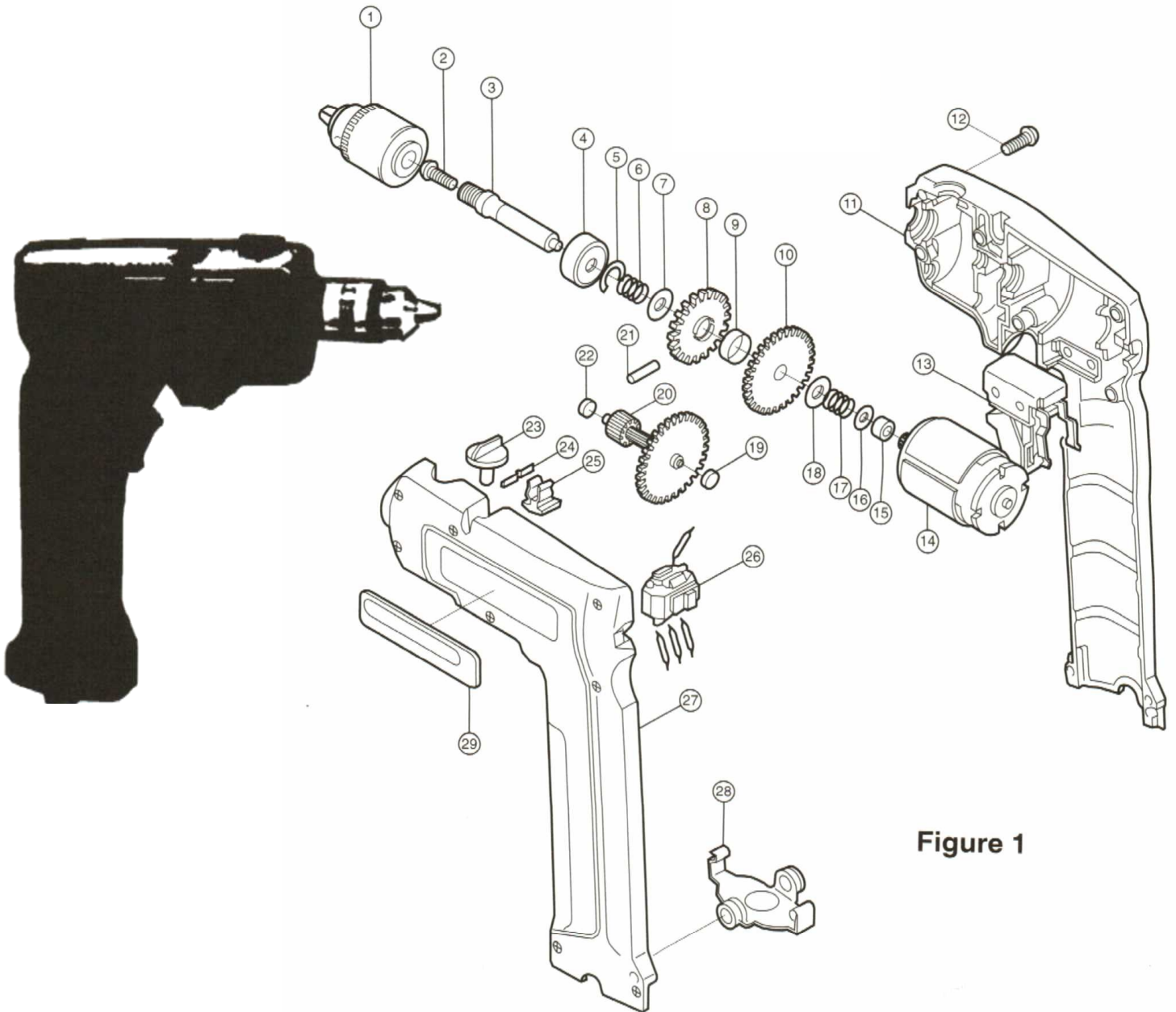


Figure 1

Item number	Number used	Description	Item Number	Number used	Description
1	1	Drill chuck DC10	16	1	Flat washer FW5
2	1	Pan head screw M5 × 18	17	1	Compression spring CP10
3	1	Spindle	18	1	Thin washer TW10
4	1	Ball bearing 6000LLE	19	1	Bearing B4
5	1	Stop Ring E-9	20	1	Gear complete GC 28
6	1	Compression spring CP10	21	1	Pin 3
7	1	Thin washer TW10	22	1	Bearing B6
8	1	Spur gear 93	23	1	Shifter
9	1	Ring 16	24	1	Leaf spring
10	1	Spur gear 78	25	1	Holder 6
11	1	Housing set	26	1	Switch
12	8	Pan head screw M4 × 22	27	1	Housing
13	1	Switch	28	1	Set plate
14	1	DC motor 9-6V	29	1	Name plate
15	1	Bearing B5			

Q6. Drawings and parts list for an electric drill are shown on the **Question 6 Information Sheet**. Study the sheet and then answer the following questions.

Marks

- (a) State the number of pan head screws that are needed to hold the drill housing sets together and state their item number.

Number of screws _____

Item Number _____

1
0
1
0

- (b) Give the description of the part onto which item number 22 is fitted.

Description _____

1
0

- (c) State the item number for the item which goes between “Spur Gear 78” and Spur Gear 93”

Item Number _____

1
0

- (d) Give the Voltage at which the DC Motor operates

Voltage _____

1
0

[5]

Q7. A poster promoting “Leap!”, a Falkirk based gymnastics club, 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 club.

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 gymnast**—state **one** DTP edit.

Edit _____

1
0

(ii) **Gold Medal** —state **one** DTP edit.

Edit _____

1
0

(iii) **“Leap!” club name**—state **one** DTP edit.

Edit _____

1
0

(iv) **Slogan**—state **one** DTP edit (do not repeat a previous answer).

Edit _____

1
0

(v) **Orange flashbar**—state **one** DTP edit.

Edit _____

1
0

(b) Creating depth and unity can be important in graphic design. State how the designer has created depth and unity in this design. Do not repeat answer from question (a).

Depth _____

2
1

Unity _____

0

[7]

Marks



Slogan:

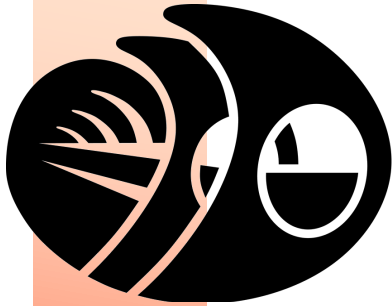
Go for GOLD with Falkirk's
Premier Gymnastics Club



The Falkirk
Wheel

Club Name:

LEAP!



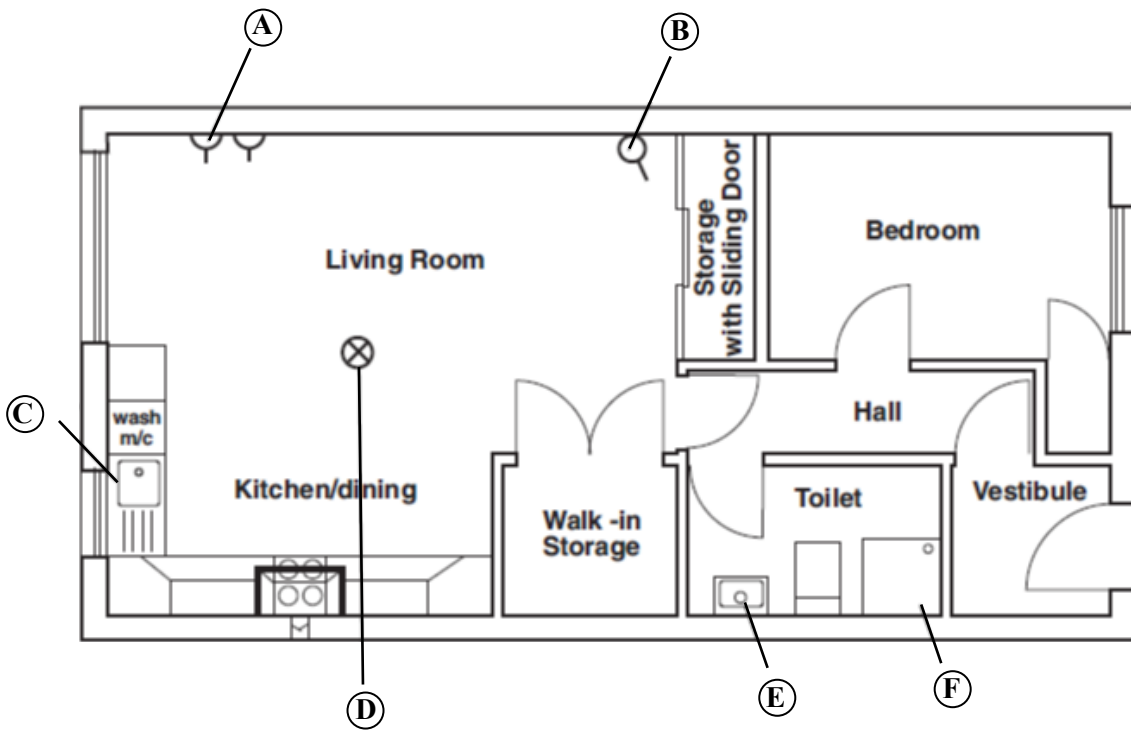
LEAP!



**GO FOR GOLD WITH FALKIRK'S
PREMIER GYMNASTICS CLUB**

Q8. A floor plan of a flat is shown below.

Marks



(a) What is represented by the symbol B and symbol E

Symbol B _____ Symbol E _____

2
1
0

(b) How many doors would you pass through if you went from outside to the kitchen?

1
0

(c) Suggest a method of ensuring all symbols were consistently to the same standard.

1
0

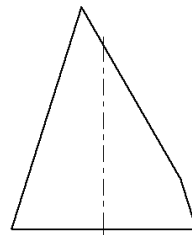
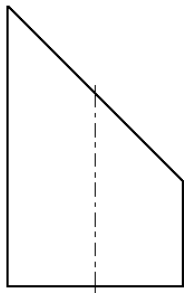
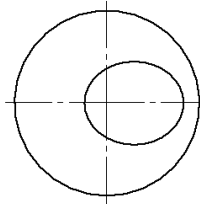
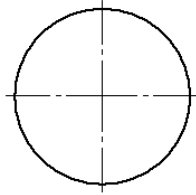
(d) What is the advantage of using this method?

1
0

[5]

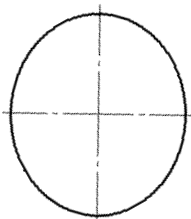
Q9. Two cut geometric forms are shown as orthographic views.
 Options for the true shape of the cut surfaces are given below, letter A-F.
 Place the letter of the matching true shape in the box under each cut geometric form in the orthographic views.

Marks

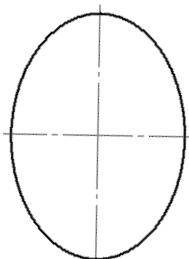


True Shape

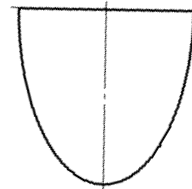
True Shape



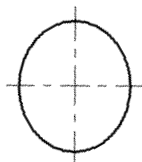
A



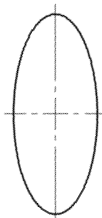
B



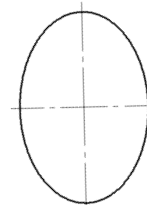
C



D



E



F

1
0

1
0

[2]

END OF QUESTION PAPER