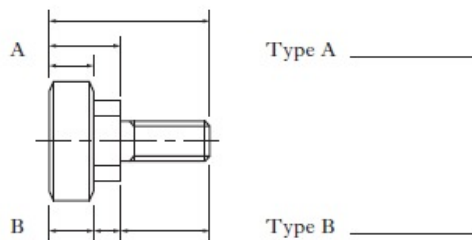


2 **Section A**

(a) State the **two** types of dimensioning shown below at A and B.

Marks



2

(b) In order to manufacture the component, accurate functional tolerances will have to be applied. Explain why Type A would be preferable.

.....

.....

.....

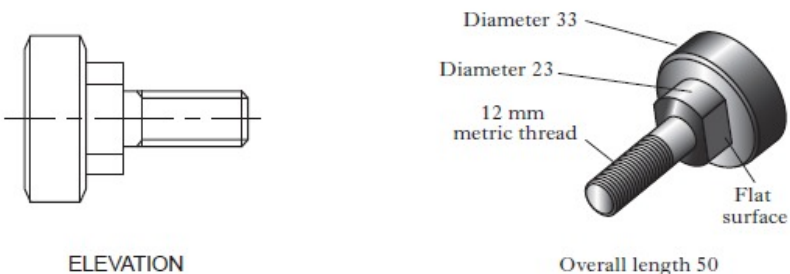
1

(c) Sketch on the elevation below, to British Standards convention:

- (i) the 4 dimensions shown on the pictorial view;
- (ii) the flat surface.

4

1

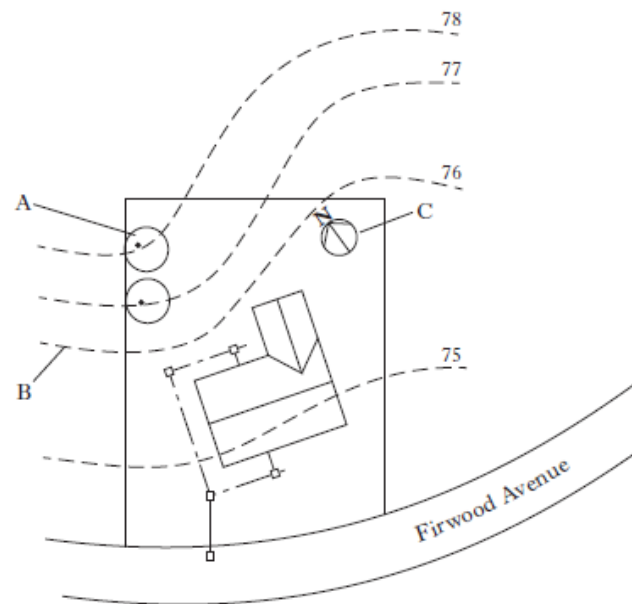


(8)

4 **Section A**

A Site Plan is shown below, not to scale.

Marks



(a) State a suitable scale for this type of plan.

.....

1

(b) State the name of the British Standards (BSI) architectural symbols represented at A, B and C.

A

B

C

3

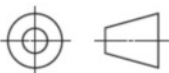

(c) State the name of **one** other type of architectural building plan.

.....

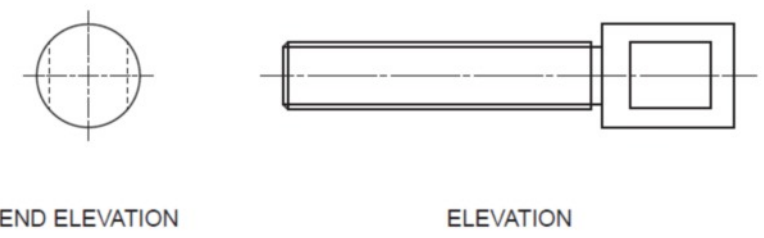
1

(5)

An engineering company wants to test out two new parts for an expensive drilling machine. What benefits might testing it using CAD software bring? (4)

- 6**
- (a) State the main reason for the use of British Standards conventions on drawings. *Marks*
-
- **1**
- (b) State the names of the British Standard conventions shown below.
- (i) 
- 1**
- (ii) **A/F**
- 1**
- (iii) **R**
- 1**
- (iv) 
- 1**
- (c) State the names of the **two** types of sections shown at **X** and **Y-Y** on the drawing shown below.

- Section A**
- Marks*
- (d) Sketch on the drawing below, using British Standard conventions.
- (i) The metric thread diameter 12 mm on the elevation. **1**
- (ii) The flat surface at the right hand end of the component. **1**
- (iii) The external thread detail on the end elevation. **1**

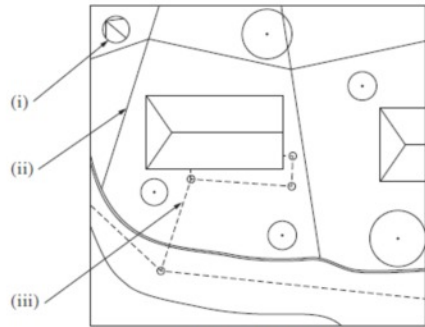


Name:

3 **Section A**

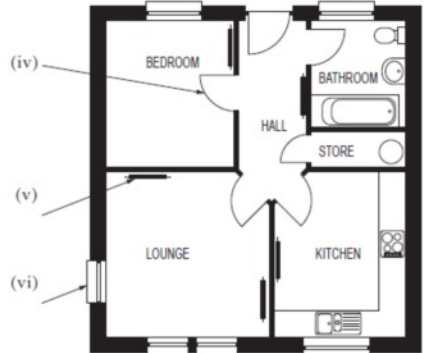
A firm of architects have produced a range of building plans for a new house. Marks

(a) Look at the plans shown below and identify the features indicated.



Site Plan (not to scale)

- Site plan Feature
- (i) 1
 - (ii) 1
 - (iii) 1



Floor Plan (not to scale)

- Floor plan Feature
- (iv) 1
 - (v) 1
 - (vi) 1

(b) For each of the above building plan types, state an appropriate British Standard scale.

Site plan scale 1

Floor plan scale 1

(c) Name another type of building plan.

Type of plan 1

(9)

1 *A supplementary page is included at the end of Section A for use if extra space is required.*

An engineer's office uses a range of *Preliminary and Production* graphics. Marks

Explain the purpose of each **type** of graphic and give **one** example of each.

Preliminary Purpose 1

Example 1

Production Purpose 1


Example 1

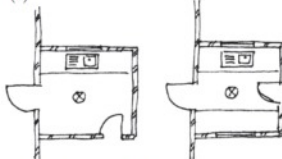
2 (4)

5 **Section A**


The 3Ps are used extensively in the design, manufacture and marketing within the construction industry. Marks

Identify the type, and explain the purpose of each of the 3Ps shown below.

(a)  Type 1
 Purpose 1

(b)  Type 1
 Purpose 1

Alternative designs for extension

(c)  Type 1
 Purpose 1

(6)

4. For this question, you must refer to the magazine layout shown in the supplement **ON THE NEXT PAGE**

MARKS
DO NOT
WRITE IN
THIS
MARGIN

(a) State two instances where the graphic designer has created depth to add interest in the magazine layout.

2

(b) State an example of emphasis in the layout and explain the effect created.

2

The graphic designer has made use of value in the magazine layout.

(c) State where value has been used in the layout and explain the effect it has.

2

(d) Describe how the graphic designer has created an informal and interesting look to the magazine layout.

2

4. (continued)

(e) State where rhythm has been used in the magazine layout.

1

Throughout the magazine layout, the graphic designer has made use of varied proportion.

(f) Explain what effect the use of varied proportion has on the magazine layout.

2

MARKS
DO NOT
WRITE IN
THIS
MARGIN



44

The number of litres of fuel a plane gets through in one lap of the course.

Is the average climb rate in ft/min achievable by any of the planes and pilots

8

6

The length, in metres of the EDGE 540 plane, the wingspan totals 7.44m and has a top speed of 426.8kph. Only 230 knots.

The Las Vegas Super Air Race marks the seventh and penultimate race of the season, and as the World Championship heats up in the Nevada Desert, the stakes have never been higher.



79

In seconds, is the average lap time recorded by the pilots in the previous 7 races. The fastest lap was achieved by Austrian pilot Hannes Arch in Abu Dhabi with a time of 74.34 seconds.

12

The number of pilots competing in the Master Class category in eight races across the globe for the title of 2014 Super Air Race World Champion. Pilots can win World Championship points at each race and the pilot with the most points after the last race of the season becomes the Super Air Race World Champion.



Paul Bonhomme leads the standings by 1 point. He is the most successful pilot in the history of the Super Air Race. The celebrated British Ace has won a record 13 races and been on the podium 36 times in the 50 races since the sport was created in 2003.

109

The FAI was founded in France 109 years ago in 1905 and is a non-governmental and non-profit-making organisation. They recognize the Super Air Race World Championships as an official World Championship.

982

The number of competitive hours of racing so far this season. The 2014 Super Air Race World Championships is heading for the season showdown in Las Vegas, but the race for the title is not over by any means.

43

The number of points available in every race. The top 8 finishing pilots are awarded points. 1st place pilot receives 12 world championship points. Pilots finishing 9th to 12th receive no points.

The top 8 Super Air Race pilots on the Las Vegas Motor Speedway race track at the second-lap stop of the season in Las Vegas, USA on 11 and 12 October.

53

The age of the oldest pilot to compete in the Super Air Race World Championship. The next oldest contender is 36...



25

The number of world nations represented at the 2014 Super Air Race World Championships. So far 12 different nation's pilots have taken home one of the top 3 places in the championships - which undoubtedly gathers together the world's greatest stunt pilots.

2014

BY THE NUMBERS

25

The maximum G-Force experienced by pilots whilst navigating the chicane section of the course. 5 times as many G's an F1 driver will ever experience.

62

The number of replacement engines planes can get through in a year of competition.



63

The time it takes, in seconds, for a pilot to reach 2,000ft above sea-level from a standing-still take-off.

3 The number of sectors in the race. Detailed timing sheets are produced after each flying session, which have all the different sectors, know as split times, with speeds included.



3. State an instance where **SHAPE** has been adopted, and what effect this has on the page. (2)

4. The designer has given the impression of **DEPTH** in several instances here. Give two examples of this, explaining how this has been achieved using **DTP techniques**. (4)

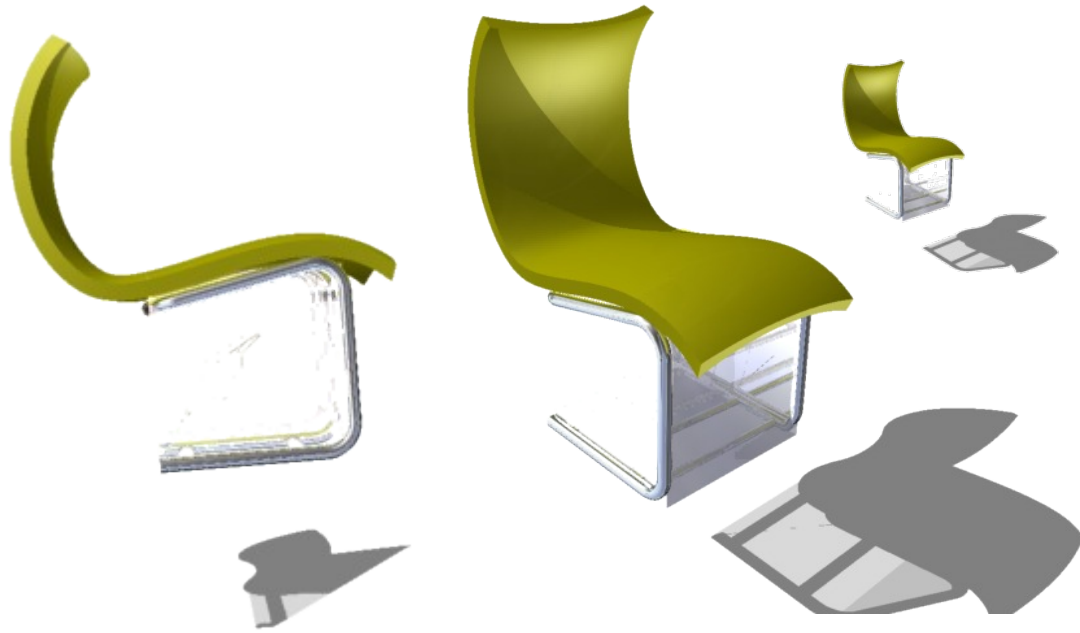
5. How has the designer applied the design element of **VALUE** here, and what effect does it have? Give two examples(4)

6. What is the most dominant element of the page, and how has this been achieved?

1. Give two examples of **WHITE SPACE** in this layout, and what effect does this have on the page (4).

2. The designer has used **TEXT WRAP** in the layout. Identify two instances where this occurs, and what Design Principle this results in. (3)

Provide a **DETAILED MODELLING PLAN** for CAD production, including appropriate dimensions and sketches for each stage. You should include at least **6 STAGES**, and adopt techniques consistent with Higher Level Graphics. i.e. not just EXTRUDE.



Provide a **DETAILED MODELLING PLAN** for CAD production, including appropriate dimensions and sketches for each stage. You should include at least **6 STAGES**, and adopt techniques consistent with Higher Level Graphics. i.e. not just EXTRUDE.



Kettle



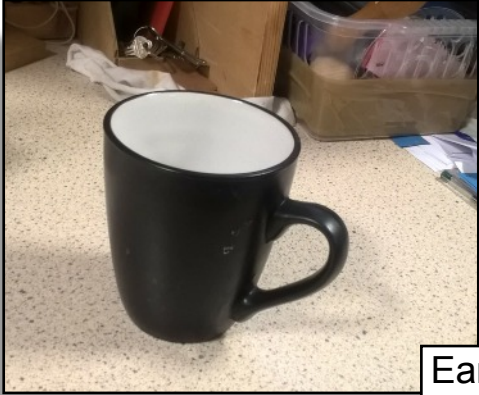
Provide a **DETAILED MODELLING PLAN** for CAD production, including appropriate dimensions and sketches for each stage. You should include at least **6 STAGES**, and adopt techniques consistent with Higher Level Graphics. i.e. not just EXTRUDE.



Ear defenders



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Ear defenders

Name: