



# Coimisiún na Scrúduithe Stáit State Examinations Commission

*Leaving Certificate Applied - 2006*

## Vocational Specialism - Graphics & Construction Studies (240 marks)

Tuesday, 13<sup>th</sup>. June 2006  
Morning 9.30 am - 11.00 am.

*For the Superintendent only*

Centre Stamp
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1.	Total of end of page totals	
2.	Aggregate total of all disallowed question(s)	
3.	Total mark awarded (1 minus 2)	
4.	Bonus mark for answering through Irish (if applicable)	
5.	Total mark awarded if Irish Bonus (3+4)	
Note: The mark in row 3 (or row 5 if an Irish Bonus is awarded) must equal the mark in the <b>Mór-Iomlán</b> box on the script		

### General Directions

1. Write your examination number in this space:

2. There are two sections in this paper.

*Section 1* - Answer **both** questions. - 105 marks

**Q1 - Short answer questions**

**Q2 - Graphic Communication**

*Section 2* - Five questions, answer **any three**. - 135 marks

**Q1 - Construction**

**Q2 - Building Services**

**Q3 - Woodcraft**

**Q4 - Design and Manufacture of Educational Toys**

**Q5 - Computer Aided Design**

3. Write your answers in the spaces provided and include sketches as appropriate.

# Section 1

# COMPULSORY QUESTION 1

(60 Marks)

1. Answer any TWELVE of the following FIFTEEN short questions.

(a) Describe one practical skill that you learned during this course.

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(b) Sketch in the space provided one hand tool you used during this course.



(c) Give **TWO** safety precautions to be observed when using an electric sander.

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(d) Name the **TWO** woodwork machines shown.

1



1

2



2

- (e) A list of material properties is given below.  
Select the property which makes the wood *ash* suitable for sporting equipment.

Material Properties:- Malleable, Ductile, Elastic, Brittle.

Answer:- \_\_\_\_\_

- (f) Convert the following dimensions to millimetres.

2.8 m = \_\_\_\_\_ mm.

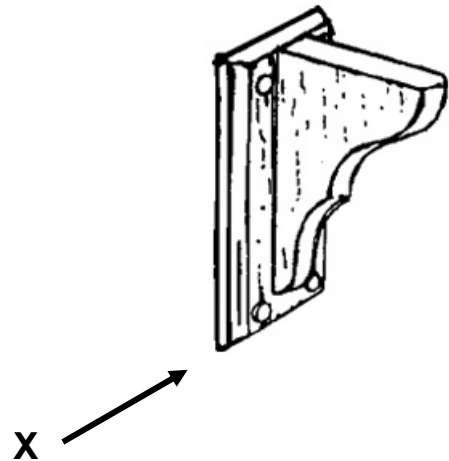
2.8 cm = \_\_\_\_\_ mm.

- (g) State **ONE** advantage and **ONE** disadvantage for the use of wind-power as a source of Energy.

Advantage: \_\_\_\_\_

Disadvantage: \_\_\_\_\_

- (h) Sketch an elevation of the shelf bracket when viewed in the direction of arrow "X".



(i) State **TWO** checks to be carried out before working on a scaffold.

1. \_\_\_\_\_

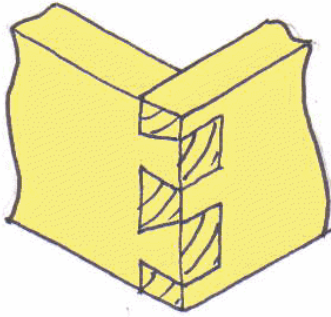
2. \_\_\_\_\_

State **TWO** reasons why a scaffold is braced.

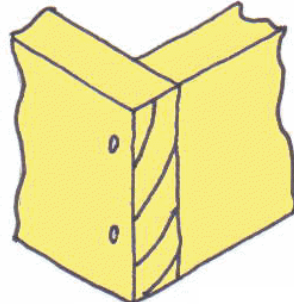
1. \_\_\_\_\_

2. \_\_\_\_\_

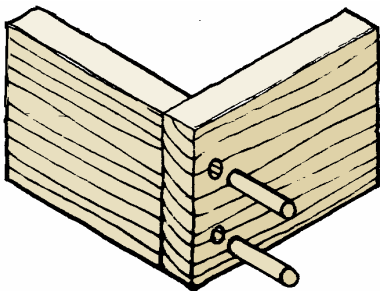
(j) Name any **THREE** of the following joints commonly used in woodwork.



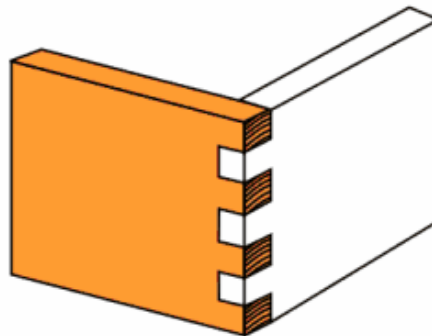
Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_

(k) Name **TWO** safety procedures that should be observed when using power hand tools.

1. \_\_\_\_\_

2. \_\_\_\_\_

(l) The following is a list of trees which grow in Ireland.

Scots Pine, Horse Chestnut, Ash, Beech, Larch, Holly, Douglas Fir, Sitka Spruce.

Sort the trees under the correct category:

Deciduous (Hardwood)	Coniferous. (Softwood)

(m) Given below is the formula used to calculate fuse size for electrical goods.

$$\text{Current (amps)} = \frac{\text{Power (Watts)}}{\text{Voltage}}$$

Calculate the correct fuse size for a 660 watt electric drill which is connected to a 220 volt mains power supply.

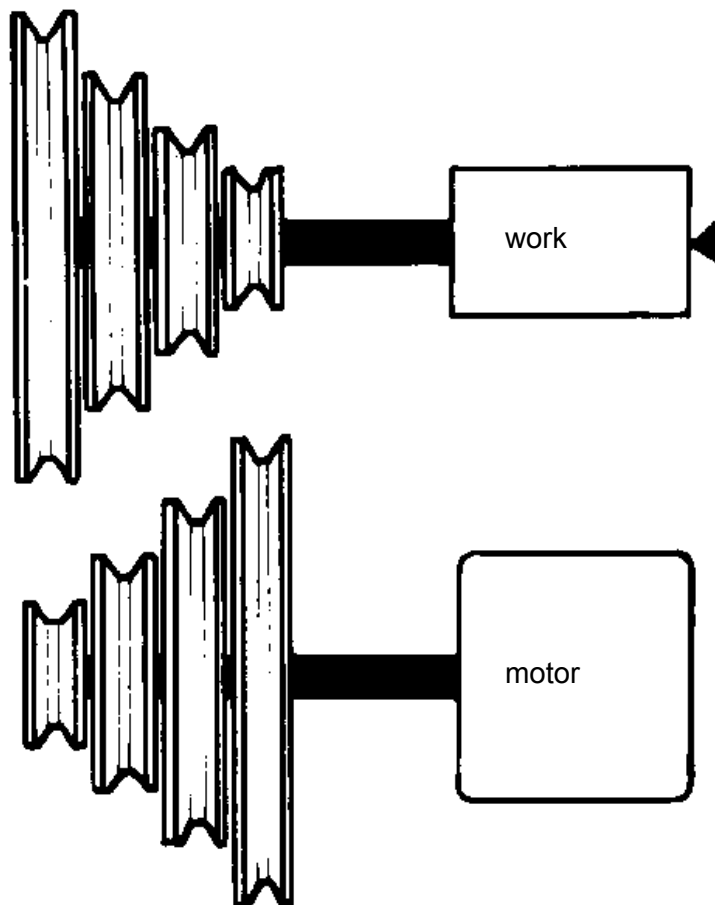
Answer: \_\_\_\_\_

(n) The first stage in the Design Process is listed below.

List the remaining stages of the Design Process in the correct order.

1. Investigation
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

(o) The drawing shows the pulley arrangement for a wood turning lathe. Draw the correct position for a belt to give the slowest speed.



**Section 1**

**COMPULSORY  
QUESTION 2**

**(45 Marks)**

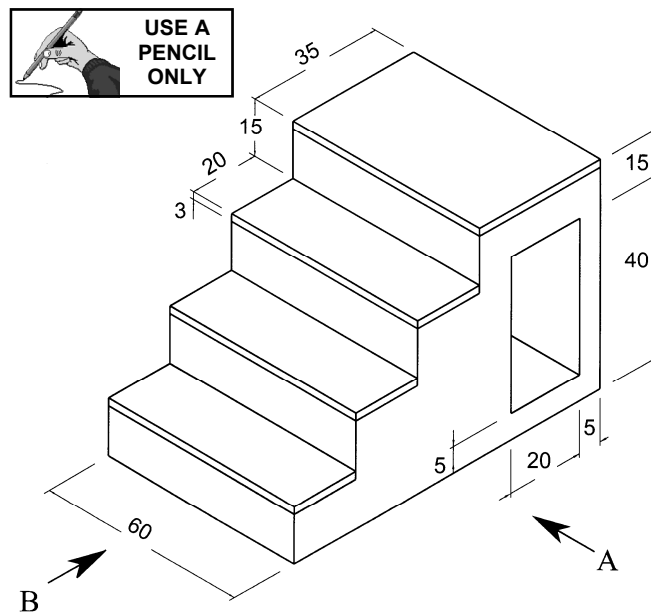
**2. Graphic Communication**

(a) The figure shows the outline of a stepped object.

Draw the following views:

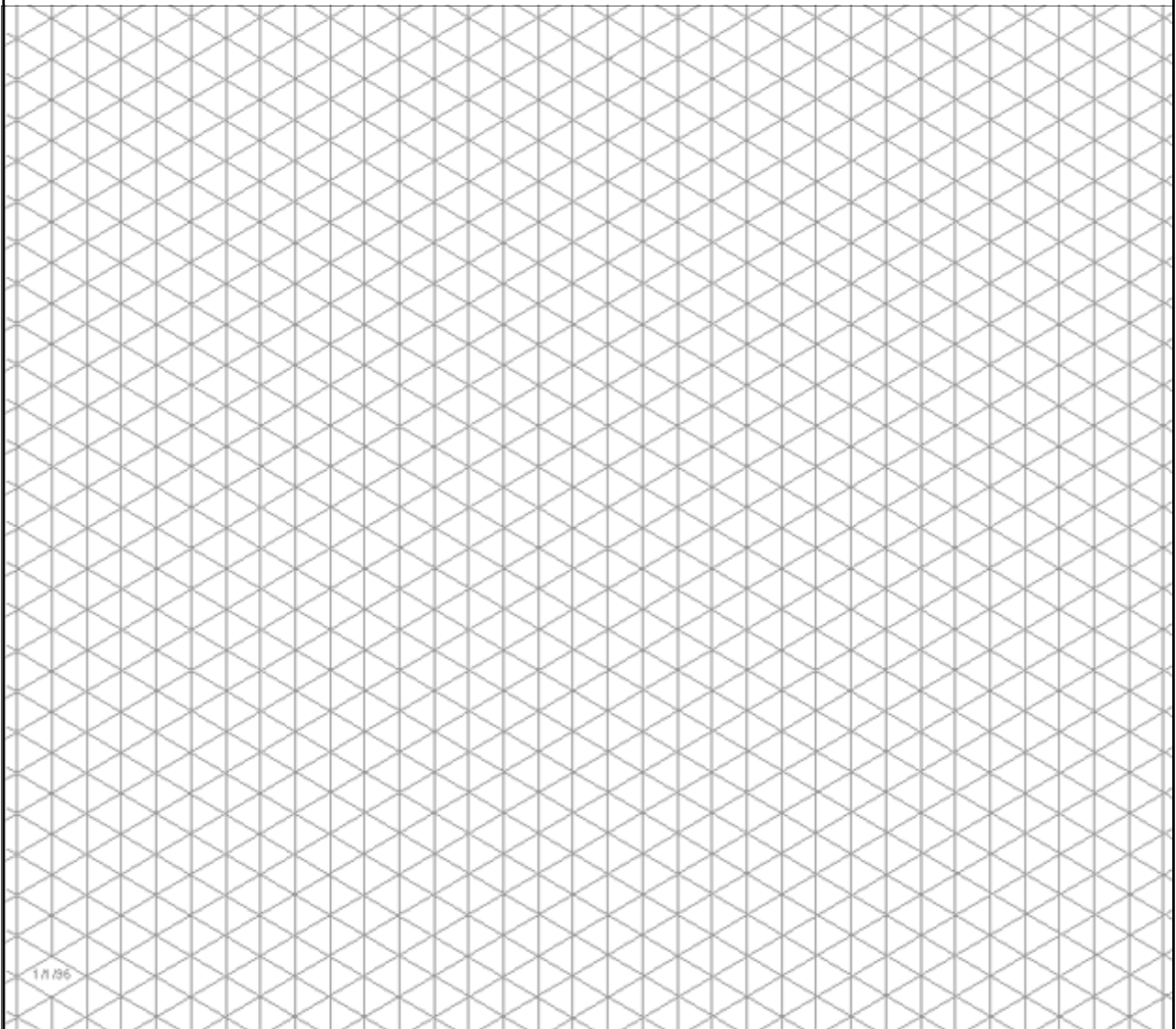
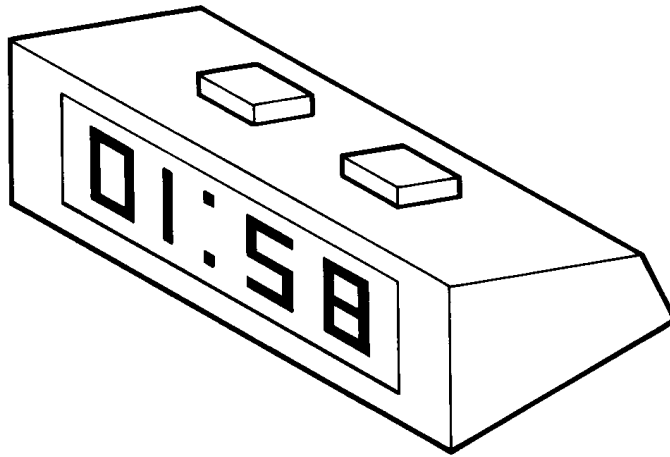
(a) (1) A front elevation looking in the direction of the arrow A.

(a) (2) An end elevation looking in the direction of the arrow B.



(b) The drawing below shows an isometric sketch of a digital clock.

Make an isometric sketch of the clock on the grid paper below.  
It is not necessary to include the digits for the time on the sketch.

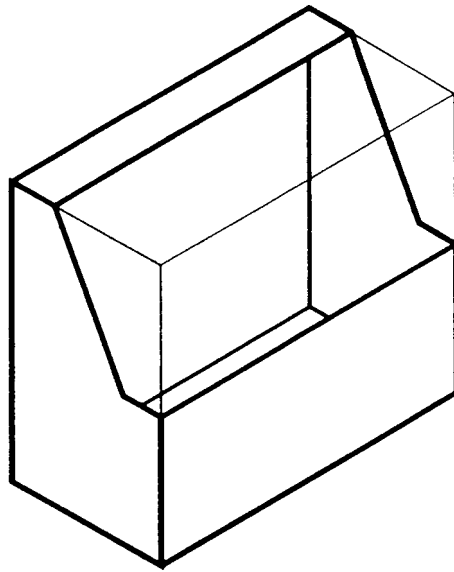


1/1/96



(c)

The pictorial view of a display box is shown.  
Sketch the surface development of this display box.



## Section 2

(135 Marks)

Answer ANY THREE Questions from this section.

### 1. Construction

(a) Describe the work of **THREE** of the following trades associated with the construction industry.

1. Plumber \_\_\_\_\_

\_\_\_\_\_

2. Electrician \_\_\_\_\_

\_\_\_\_\_

3. Plasterer \_\_\_\_\_

\_\_\_\_\_

4. Carpenter \_\_\_\_\_

\_\_\_\_\_

(b) A Timber-Frame wall detail, including a cavity, is shown below.

Name any **FIVE** of the elements shown.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

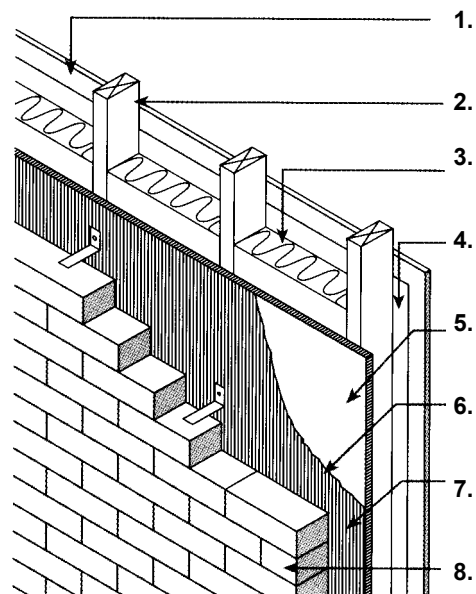
4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_



- (c) (1) Name the **TWO** types of internal door shown.  
Describe **ONE** advantage and **ONE** disadvantage of each door type.



Name: \_\_\_\_\_

Advantage: \_\_\_\_\_

\_\_\_\_\_

Disadvantage: \_\_\_\_\_

\_\_\_\_\_



Name: \_\_\_\_\_

Advantage: \_\_\_\_\_

\_\_\_\_\_

Disadvantage: \_\_\_\_\_

\_\_\_\_\_

- (c) (2) Describe the correct procedure for lifting a heavy object off the ground.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



- (c) (3) Explain the term "Safe Pass" as it relates to the construction industry.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 2. Building Services

- (a) A range of common plumbing fittings used in most households are shown.  
(a) (1) Name any **FIVE** of the plumbing fittings shown..



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_

- (a) (2) The diagram shows a typical kitchen tap, that may develop a leak over time. Suggest a reason why a leak may occur and describe the correct procedure to fix such a leak.

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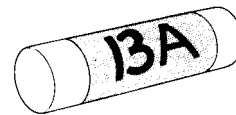
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- (b) (1) A common electrical component is shown opposite. Name the component.



Answer: \_\_\_\_\_

- (b) (2) Explain what this component is used for.

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- (b) (3) Name an electrical fitting where such a component is used.

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- (c) The diagram shows two bulbs connected.

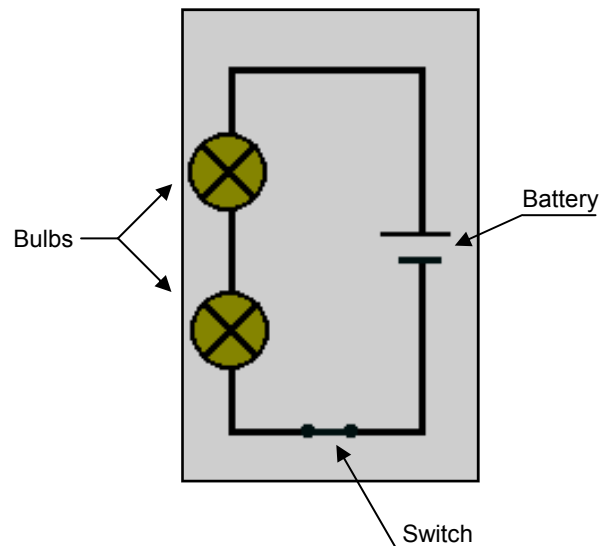
These bulbs are either connected in:

Series.

**OR**

Parallel.

State which of the above options is correct.



Answer: \_\_\_\_\_

### 3. Woodcraft

(a) A woodwork power hand tool is shown.

(a) (1) Name this power hand tool.

Answer \_\_\_\_\_



(a) (2) Sketch in the space below the profile of any cutter (bit) for this tool.

(a) (3) Describe the correct procedure for changing a bit in this power tool.

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(a) (4) List **THREE** safety procedures that should be followed when using this power tool.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

- (b) The diagram shows a wooden wall cabinet.  
 (b) (1) Describe how you would mark out the designs on the top and bottom rails.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



- (b) (2) Describe how you would cut out the shapes.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- (b) (3) Describe how the cabinet might be securely mounted on the wall.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- (c) A range of fittings associated with woodcraft are shown  
 (c) (1) Name any **FIVE** of the fittings shown.



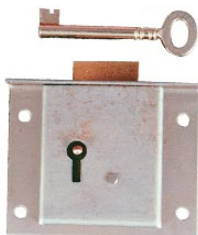
Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_



Answer: \_\_\_\_\_

#### 4. Design and Manufacture of Educational Toys

(a) The diagram shows a model plane made from wood.

(a) (1) Describe **TWO** educational aspects of this toy.

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(a) (2) Describe, using notes and sketches, how you would create the star design.

(a) (3) Suggest a suitable finish to be applied to the wood, taking its use into consideration.

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(b) A child's pull-along toy is shown.

(b) (1) Suggest a suitable wood for the manufacture of this toy.

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(b) (2) Describe, using notes and sketches, a change you could make to the toy which would allow it move up and down while being pulled along.

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(b) (3) Identify the safety issues that should be observed in the finishing of toys for young children.

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## 5. Computer Aided Design

- (a) The following relative co-ordinates are used to draw a shape using a CAD package. Draw the shape using the given co-ordinates starting from point 1.

From point 1

To point: @0,-30

To point: @20,0

To point: @0,-40

To point: @30,0

To point: @0,40

To point: @10,0

To point: @-60,30

Point 1 → +

- (b) Good posture is important for computer operators.  
(b) (1) Identify **TWO** regulations that should be observed when using computers.

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- (b) (2) List **TWO** career opportunities associated with Computer Aided Design.

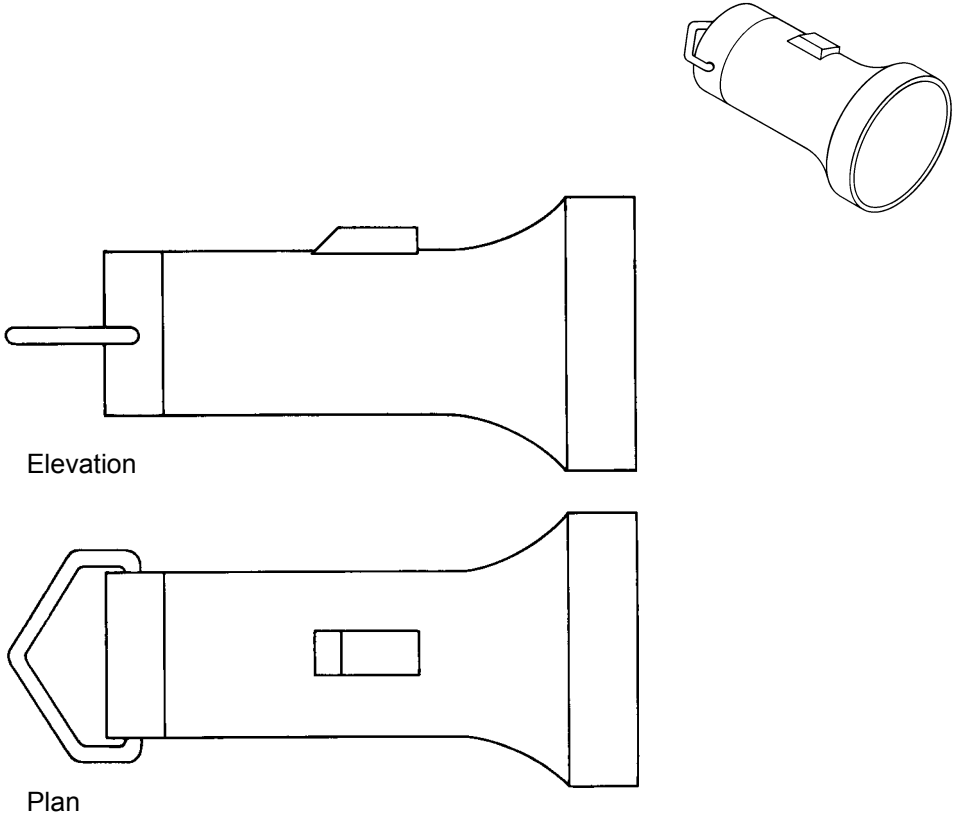
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(c) Shown are the orthographic and pictorial views of a torch produced on a CAD package. Identify any **FIVE** CAD commands used to produce the elevation and plan and describe, with notes and/or arrows on the drawing, where these Commands are used.



Command.	Where Used.
1.	
2.	
3.	
4.	
5.	

**For Examiner's use only**

	<b>Marks Awarded</b>
<b>Section 1 Q1</b>	
<b>Section 1 Q2</b>	
<b>Section 2 Q1</b>	
<b>Section 2 Q2</b>	
<b>Section 2 Q3</b>	
<b>Section 2 Q4</b>	
<b>Section 2 Q5</b>	
<b>Total</b>	