



Coimisiún na Scrúduithe Stáit State Examinations Commission

Leaving Certificate Applied - 2008

Vocational Specialism - Graphics & Construction Studies (240 marks)

Tuesday, June 10th, 2008
Morning, 9.30 am - 11.00 am

For the Superintendent only

<p>Centre Stamp</p>

General Directions

1. Write your examination number in this space:

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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)

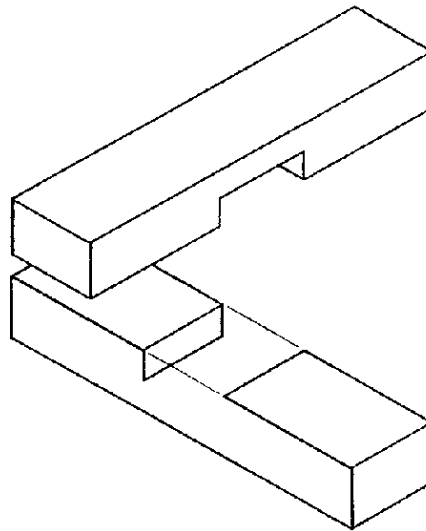
1. Answer any **TWELVE** of the following **FIFTEEN** short questions.

(a) Name the tool shown.

Name: _____



(b) Complete the diagram of the cross-halving joint shown.



(c) Explain what is meant by the term '**KNOCKDOWN FITTING**'?

(d) Name the **TWO** types of power tools shown.

1



1

2



2

(e) Explain the term: 'Off-Site Construction'.

(f) List **TWO** factors that should be considered when applying a finish to a woodwork project.

1. _____

2. _____

(g) Shown is a cordless power drill.
State **TWO** advantages of using cordless power tools.



Advantage 1: _____

Advantage 2: _____

(h) The design for the table shown is based on a regular hexagon.
Draw a regular hexagon given one side AB.

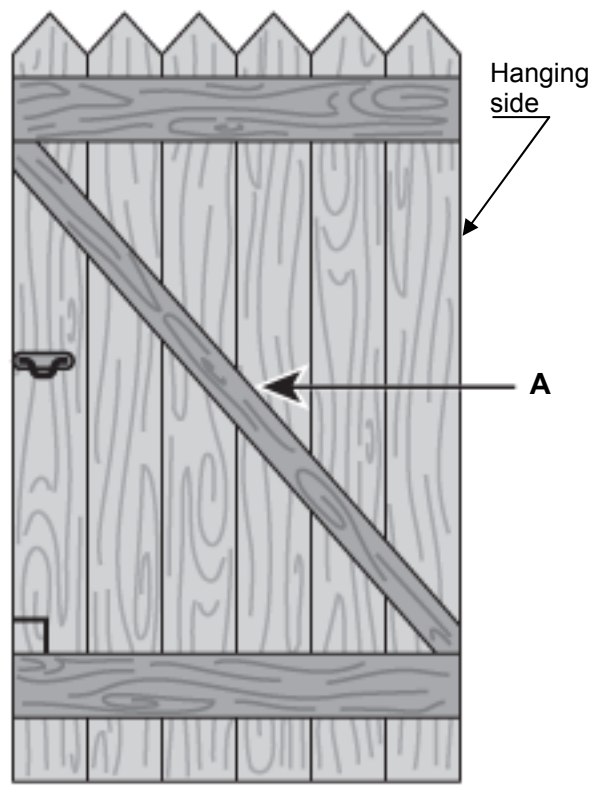


A _____ B

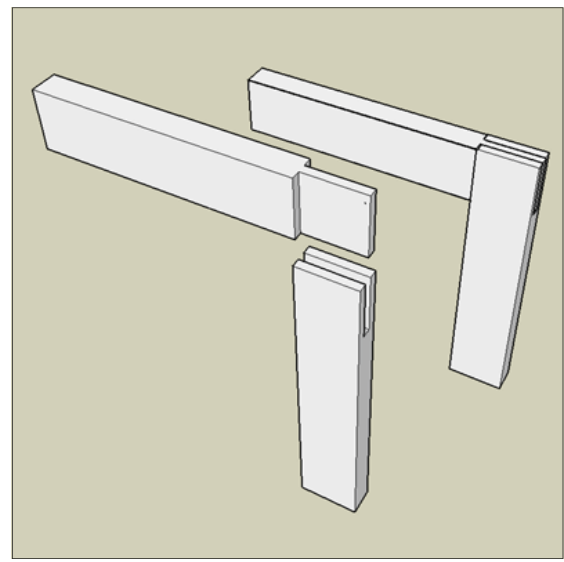


(i) A wooden gate is shown.
What is the correct name for the force acting in member **A**?

- COMPRESSION
- TORSION
- TENSION
- SHEAR



(j) The diagram shows two views of a joint used in wood, one assembled and one exploded. Name the joint shown and give one example of where this joint might be used.



Name : _____

Use: _____

- (k) The diagram shows a 3-core electrical cable. Identify each wire by selecting the correct name from the list below:



List: **Earth, Live, Neutral.**

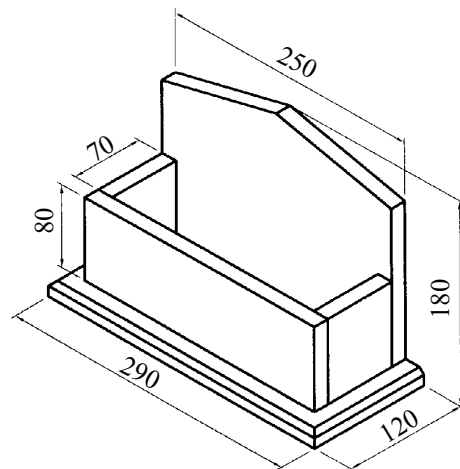
Brown: _____

Blue: _____

Green and yellow: _____

- (l) The diagram shows a letter rack. Complete the cutting list for the letter rack. (All material is 10mm thick.)

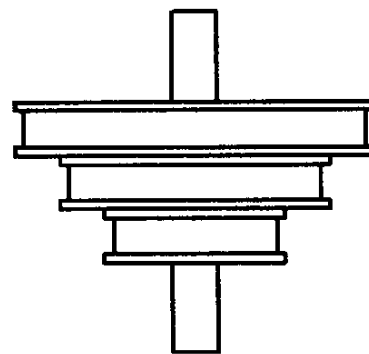
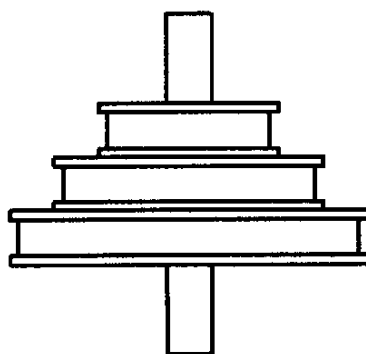
Description	Quantity	Length	Width	Thick-ness
Base	1		120	10
Back	1	250		10
Front	1		80	
Sides		70	80	10



- (m) The diagram shows an incomplete pulley system for a lathe. Illustrate on the diagram the position of the belt so as to achieve the minimum speed for the lathe.

Spindle Shaft

Motor Shaft



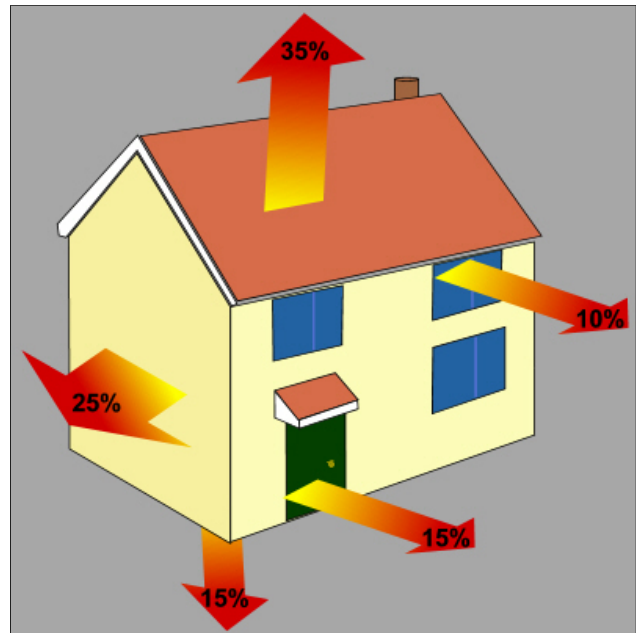
(n) Solar garden lights are in common use today. List **TWO** other uses for solar technology related to construction.



1. _____

2. _____

(o) The diagram shows the percentage heat loss from a house through the envelope. Suggest **TWO** ways in which the loss of heat from a house can be reduced.



1. _____

2. _____

Section 1

COMPULSORY QUESTION 2

(45 Marks)

2. Graphic Communication

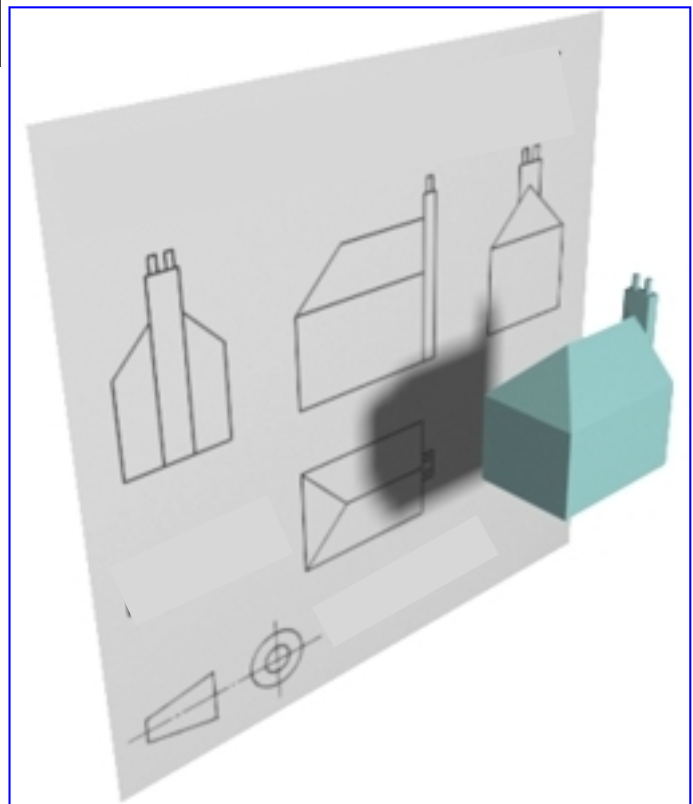
The sketch shows a drawing system.

- (a) (1) Circle the correct name for this drawing system from the following list:

Oblique Projection

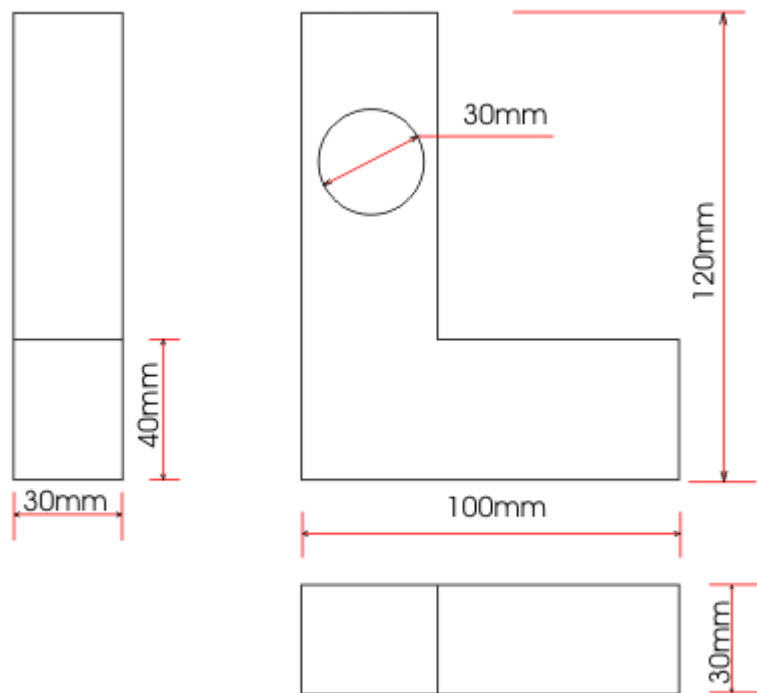
Orthographic Projection

Isometric Projection



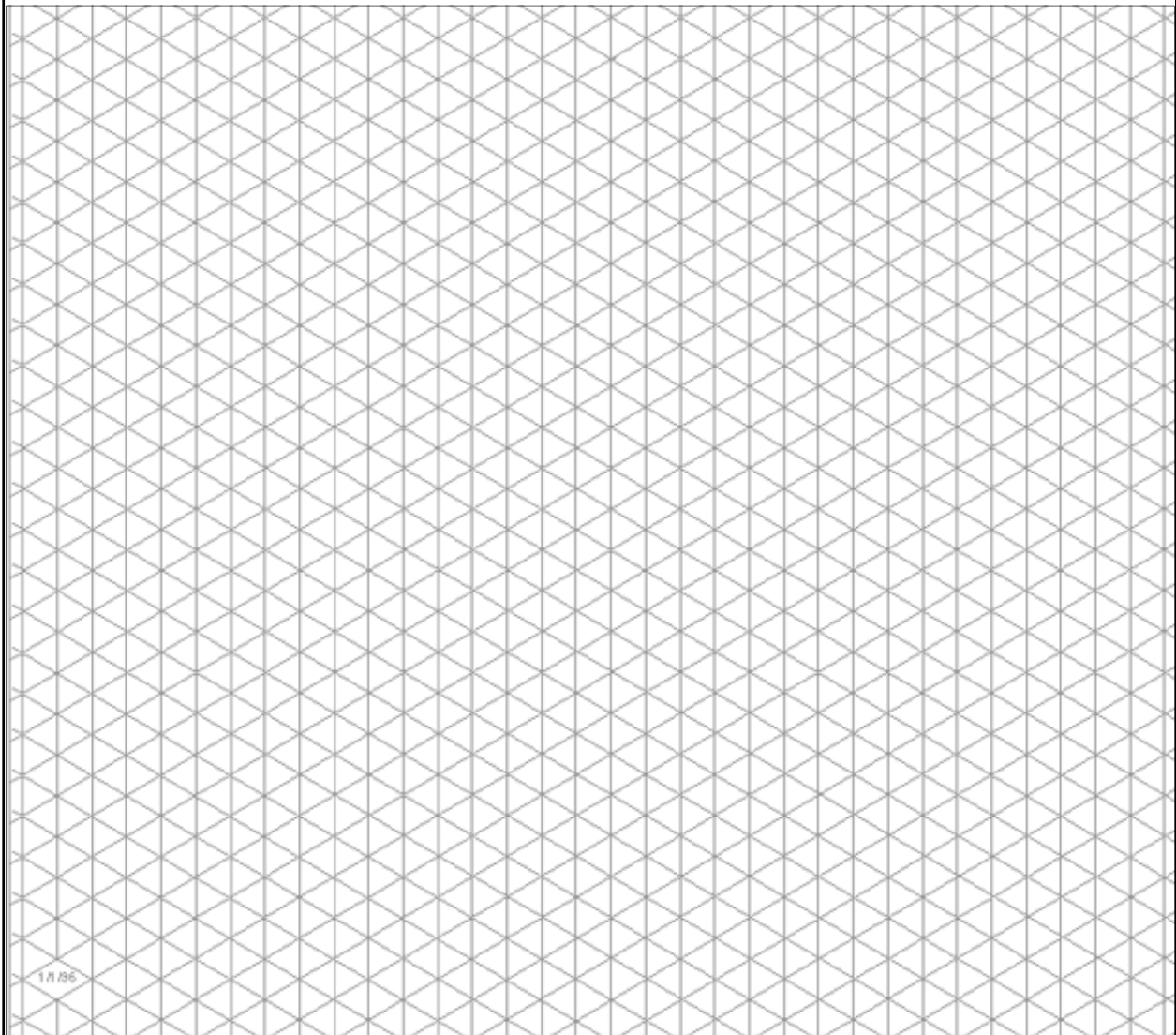
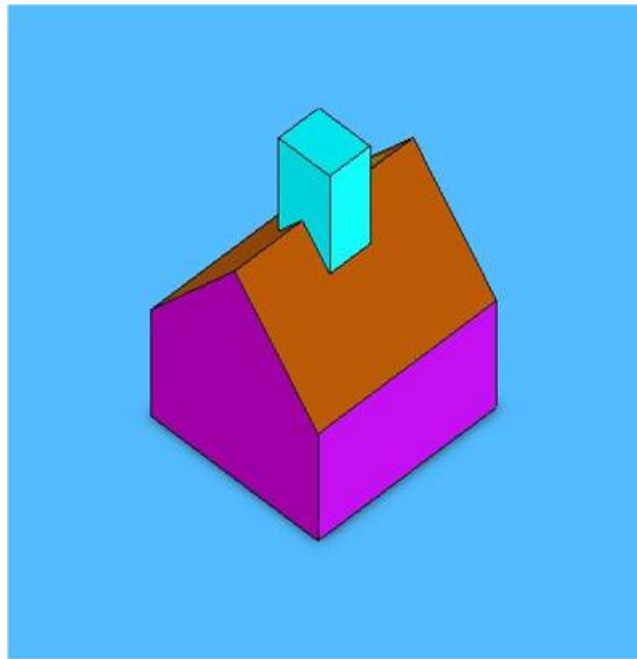
Three views of an object are shown below.

- (a) (2) Name each view.
(a) (3) Add any **TWO** additional dimensions.



- (b) The picture shows an isometric view of a building.

Redraw the isometric view of the building in the space provided.



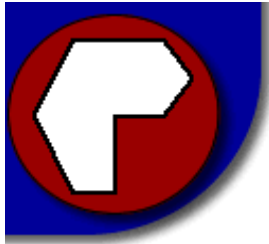
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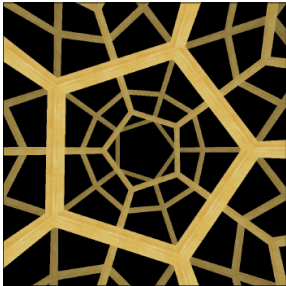
(c) Five logos / signs based on polygons are shown below.

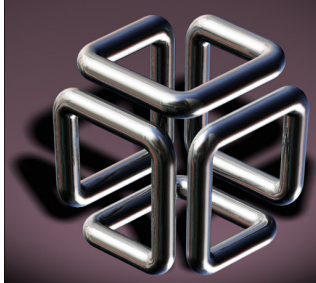
Name the polygon used to design each logo / sign.

Logo / Sign

Polygon name:











Section 2

(135 Marks)

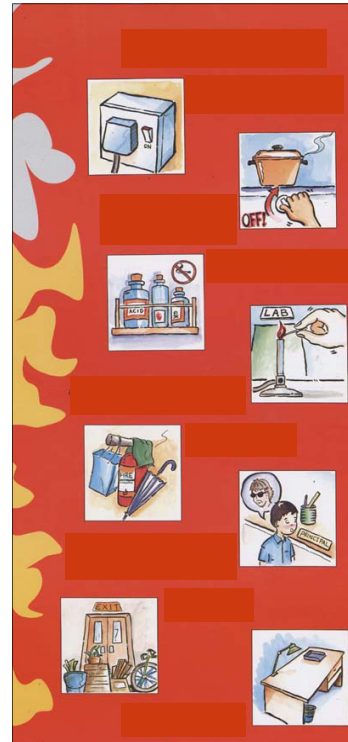
Answer ANY THREE Questions from this section.

1. Construction

- (a) The poster shown highlights precautions to be taken in relation to fire safety in a school.

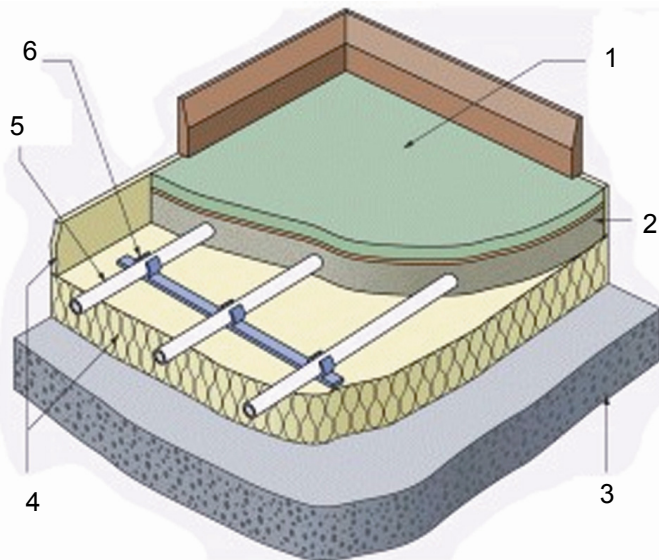
Suggest **FIVE** precautions that should be included in a similar fire safety poster for the home.

1. _____
2. _____
3. _____
4. _____
5. _____



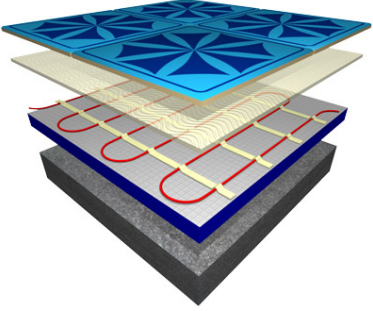
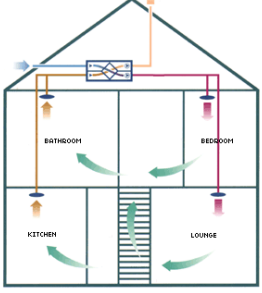



- (b) The diagram shows the construction details of underfloor heating to the ground floor of a house. Identify any **FIVE** of the six components shown.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____



(c) With increasing energy costs people are encouraged to use more efficient energy solutions when constructing their homes. Five different systems are shown. Place a tick beside the name of the correct system that matches each image.

	<p>Underfloor heating systems</p> <p>Geothermal heat pumps</p> <p>Wood pellets and wood chip boilers</p> <p>Solar panel systems</p> <p>Heat recovery ventilation systems</p>
	<p>Underfloor heating systems</p> <p>Geothermal heat pumps</p> <p>Wood pellets and wood chip boilers</p> <p>Solar panel systems</p> <p>Heat recovery ventilation systems</p>
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2. Building Services

- (a) Access for the disabled is now a standard part of the Building Regulations.

Discuss **THREE** areas in the home where disabled access needs to be considered and outline what measures can be put in place to make access easier for a person with disability.



1. _____

2. _____

3. _____

(b) Solar energy is an alternative energy in common use.

(b) (1) List **TWO** advantages of solar energy.

1. _____

2. _____

(b) (2) List **TWO** disadvantages of solar energy.

1. _____

2. _____

(b) (3) Name **TWO** fossil fuels that are used to produce electricity in Ireland.

1. _____

2. _____

(c) The image shows a number of sources of water pollution. Identify and explain **THREE** improvements that industry and agriculture can take to reduce or eliminate water pollution.








3. Woodcraft

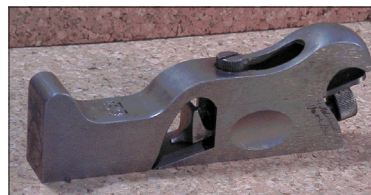
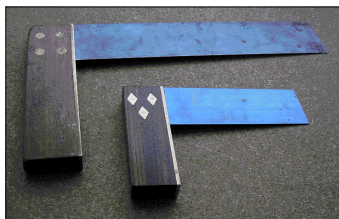
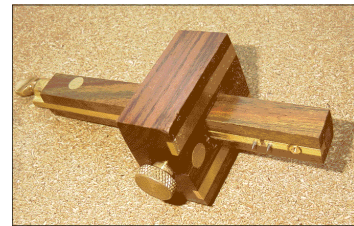
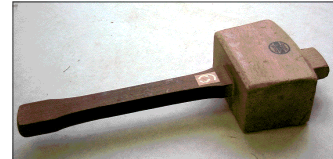
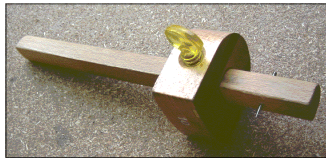
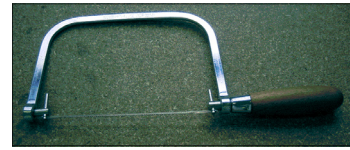
- (a) The picture shows a circular rack for storing CDs.
Describe briefly how you would mark out and make the base of the rack.



- (b) The table below shows five manufactured boards.
Name each of the manufactured boards shown and suggest one use for each.

Manufactured Board					
Name:					
Use:					

(c) Name each of the **FIFTEEN** hand tools shown below.



4. Design and Manufacture of Educational Toys

(a) (1) Describe with the aid of sketches a toy you made in the educational toy module..



(a) (2) List **THREE** educational features of the toy.

1. _____

2. _____

3. _____

(a) (3) Discuss why **Health and Safety** considerations are important in the design and manufacture of educational toys.

(b) A toy boat with a device to power it through water is shown.

(b) (1) Suggest **TWO** suitable materials for this toy.

1. _____

2. _____

(b) (2) Describe how you would make the mechanism to enable the boat to move in water.



(c) A wooden toy is shown below.

(c) (1) Describe using notes and sketches how you would cut out the profile of the fish.



(c) (2) List **TWO** safety considerations you should take into account when making this toy.

1. _____

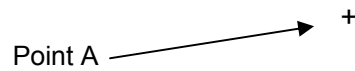
2. _____

5. Computer-Aided Design

- (a) Relative co-ordinates are used to draw using a CAD package.
Draw a shape using the given co-ordinates starting from point A.



From point A
 To point: @30,30
 To point: @-20,0
 To point: @0,30
 To point: @-20,0
 To point: @0,-30
 To point: @-20,0
 To point: @30,-30.

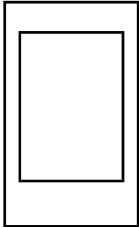
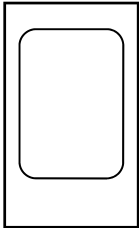
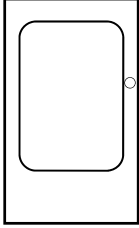
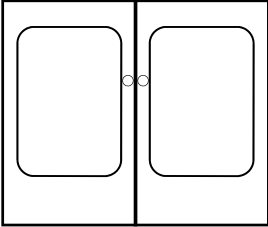
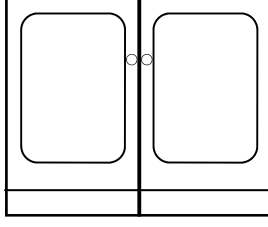


- (b) (1) Name the **DRAW** commands that are used to create the objects shown below

		AutoCAD		

- (b) (2) Name the **MODIFY** commands that are used to change the object on the left to the object(s) on the right.

(c) FIVE steps used to draw a locker unit using a CAD package are shown in the table. Identify the **FIVE** CAD commands used as the sketch progresses through each stage.

	Drawing	CAD Command.
1.		
2.		
3.		
4.		
5.		

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