

**GENERAL CERTIFICATE OF SECONDARY EDUCATION
 DESIGN AND TECHNOLOGY**

**Resistant Materials Technology
 Resistant Materials Technology (Short Course)**

**1956/01
 1056/01**

Paper 1 (Foundation Tier)

MONDAY 2 JUNE 2008

Morning
 Time: 1 hour

Candidates answer on the question paper

Additional materials: No additional materials are required



Candidate
 Forename

Candidate
 Surname

Centre
 Number

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Candidate
 Number

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INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **50**.
- Dimensions are given in millimetres unless stated otherwise.

FOR EXAMINER'S USE	
1	
2	
3	
4	
5	
TOTAL	

This document consists of **12** printed pages.

- 1 Fig. 1 shows a clock that will be hung on a wall. The clock has a mechanism that fits into a hole in the wooden back.

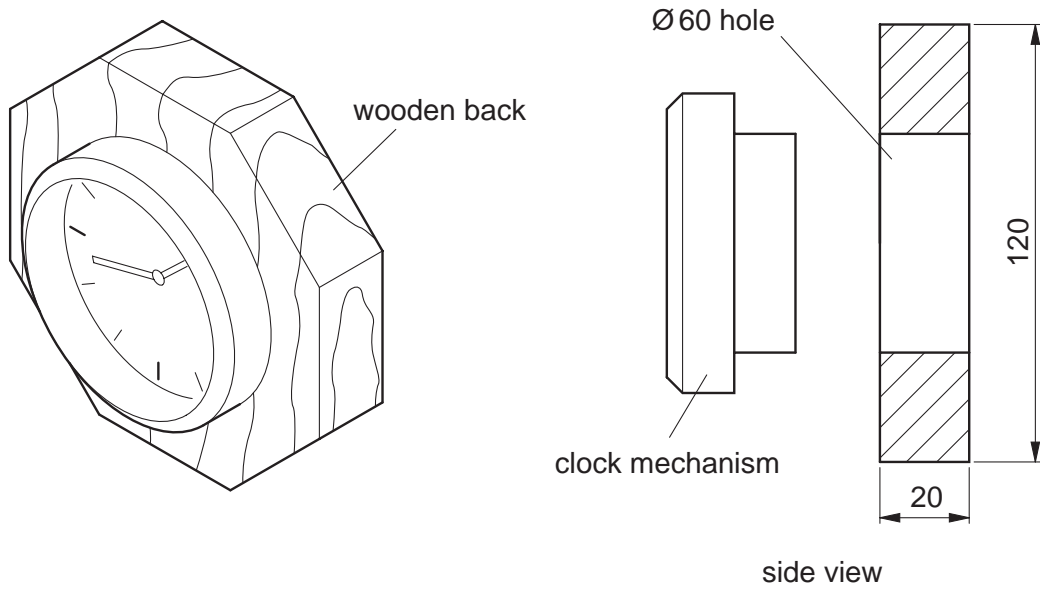


Fig. 1

- (a) Complete the table by describing what each of the tools or items of equipment are used for when making the wooden back.

Tool or item of equipment	What are each of the tools or items of equipment used for?	
Template		[1]
Tenon saw		[1]
Sanding machine		[1]
Varnish		[1]

- (b) State **one** safety precaution you would take when using a sanding machine.

.....[1]

- (c) Describe how the $\varnothing 60$ mm hole could be cut in the wooden back.

.....

[2]

3

- (d)** The clock will be hung on a wall.
Use sketches and notes to show how the clock could be hung on a wall.
Include details of any fittings you would use.

[3]

- 2 Fig. 2 shows a letter rack made from 3 mm thick acrylic plastic.

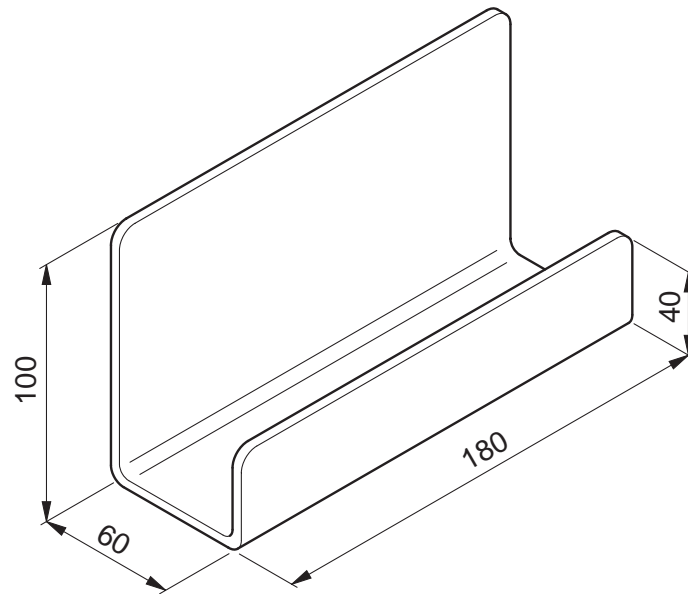
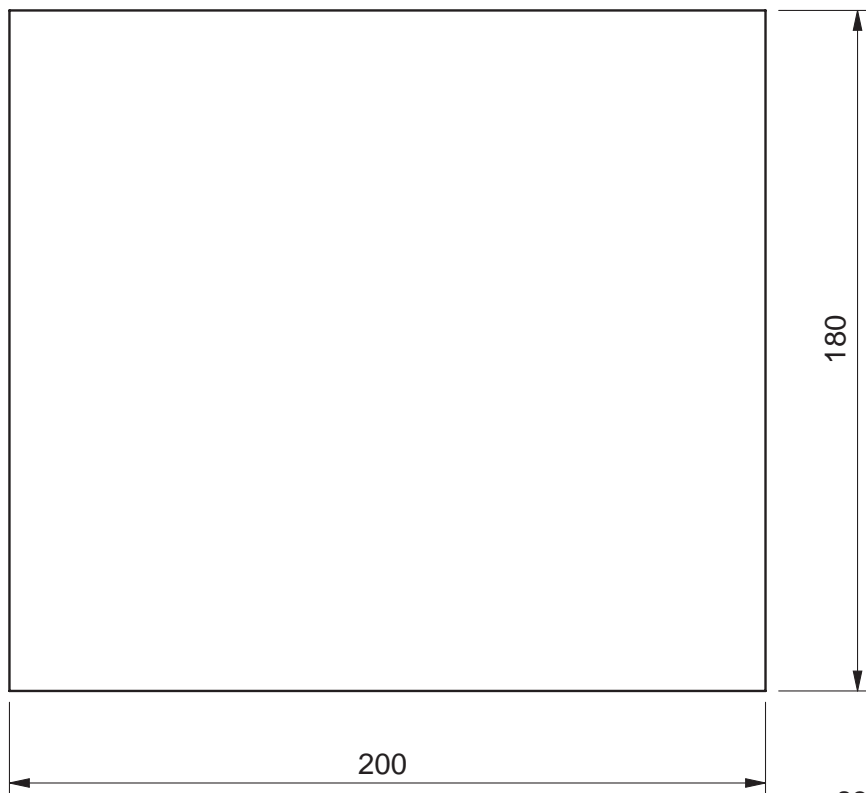


Fig. 2

- (a) Fig. 3 shows a sheet of acrylic plastic from which the letter rack will be made. Mark out the positions for the bend lines on Fig. 3.



scale: 1/2 full size

Fig. 3

[2]

(b) Give **one** reason why the bend lines would be marked using a chinagraph pencil or marker pen rather than a scribe.

.....[1]

(c) The acrylic plastic has been sawn to shape.
Give **three** different stages in producing a highly polished edge.

1.....[1]

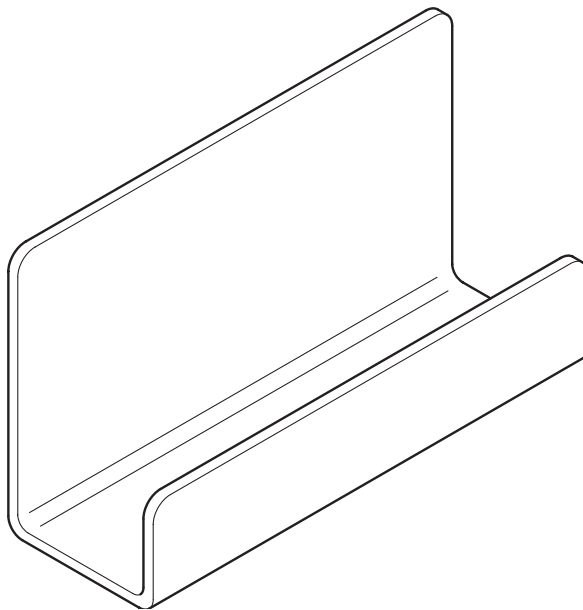
2.....[1]

3.....[1]

(d) Name **one** item of equipment that could be used to heat the plastic so that it can bent to shape.

.....[1]

(e) Use sketches and notes to show how a partition could be added to the letter rack.



[3]

3 Fig. 4 shows a pull along toy train.

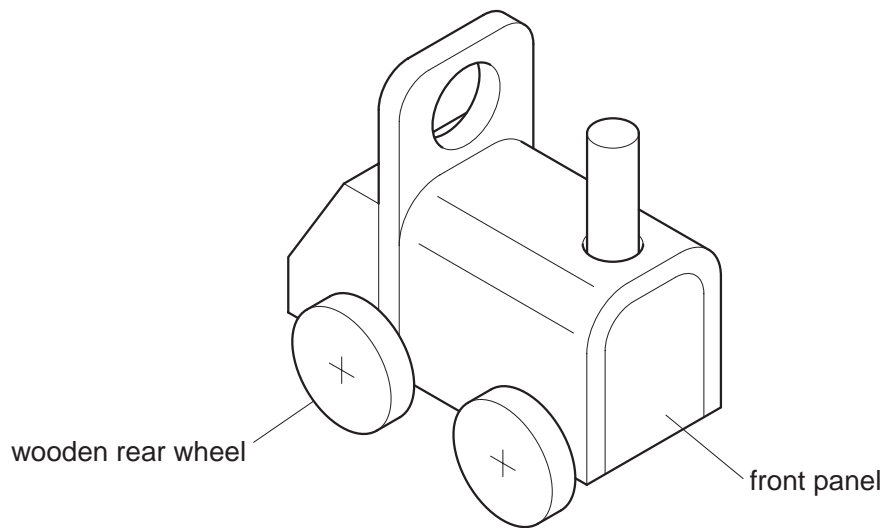


Fig. 4

(a) Fig. 5 shows part of the toy train with the front panel removed. When pulled along the funnel must move up and down as shown in Fig. 5.

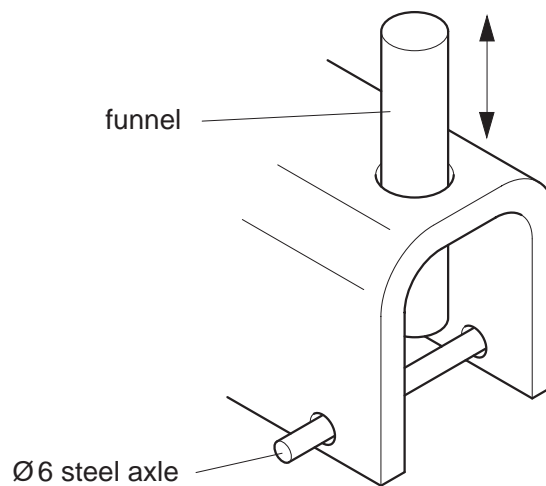


Fig. 5

(i) Draw a mechanism that could be fitted to the $\text{Ø}6$ mm steel axle that would make the funnel move up and down.

(ii) Name the mechanism you have drawn in (i).

.....[1]

(iii) Give the correct term to describe the up and down movement of the funnel.

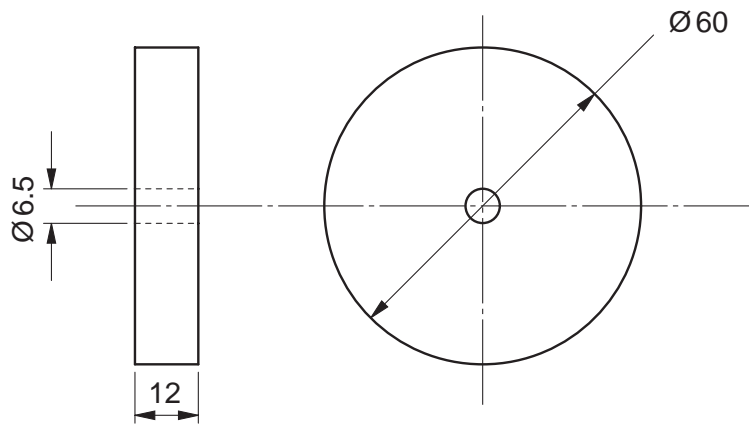
.....[1]

(b) Describe **two** safety checks you could carry out to the toy train after it has been made.

1.....[1]

2.....[1]

(c) Details of **one** of the toy train's rear wheels is shown below.



Use sketches and notes to show how the wheel could be fixed onto a Ø 6 mm steel rear axle. Your method must show how the wheel can be prevented from rubbing against the side of the toy train when pulled along.

[4]

- 4 Fig. 6 shows a wooden puzzle.
The puzzle will be batch produced.

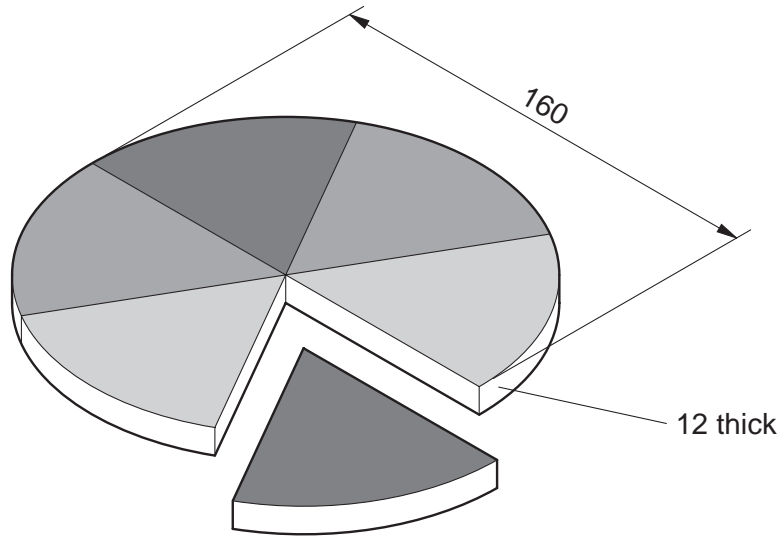


Fig. 6

- (a) The computer screen in Fig. 7 shows **one** piece of the puzzle drawn using a CAD software program.

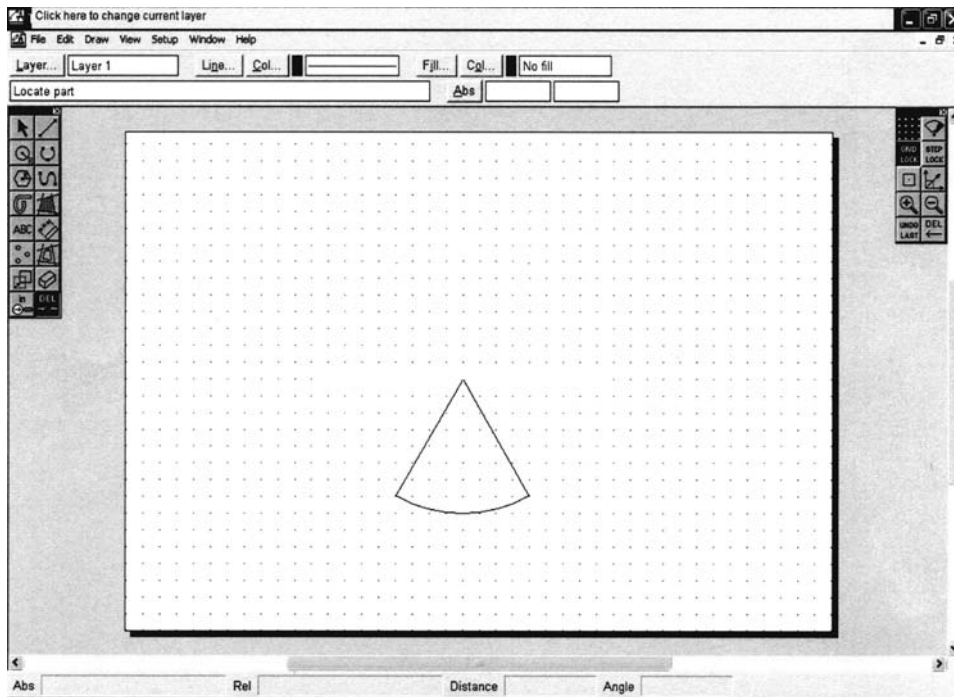


Fig. 7

State **two** CAD drawing tools that could be used when drawing one piece of the wooden puzzle.

1.....[1]

2.....[1]

(b) Describe how CAM could be used to help in the batch production of the wooden pieces.

.....
.....
..... [2]

(c) The completed puzzle will fit inside a plastic tray. The tray will be vacuum formed.

Use sketches and notes to show:

- a design for the plastic tray;
- details of the former to be used.

[4]

(d) Describe **two** quality control checks that could be made when vacuum forming the plastic tray.

1..... [1]

2..... [1]

- 5 Fig. 8 shows a trolley used in a home.
The trolley is manufactured as flat pack for self-assembly.

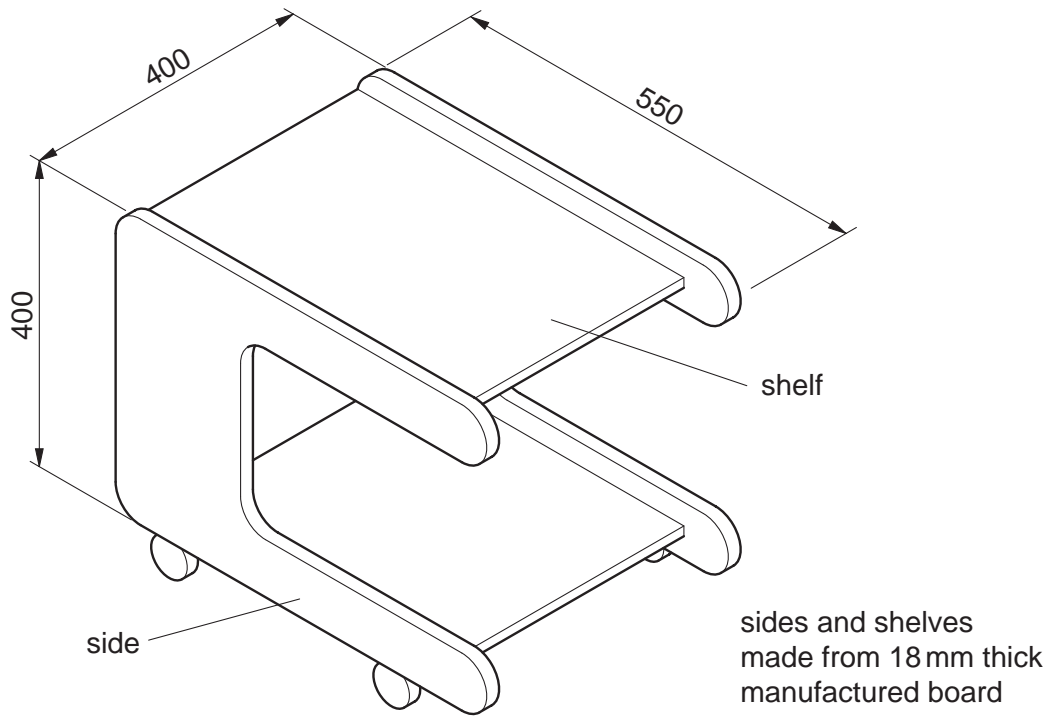


Fig. 8

- (a) Give **two** reasons why flat pack furniture is popular.

1.....[1]

2.....[1]

- (b) Use sketches and notes to show how K-D (knockdown) fittings could be used to join **one** shelf to **one** side.

(c) Fig. 9 shows one side of the trolley marked out ready to be cut to shape.

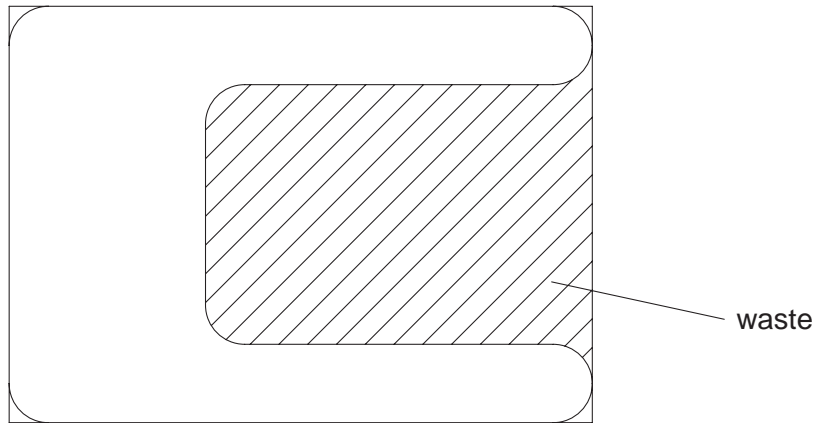


Fig. 9

Name **two** electrical power tools that could be used to cut out the shape.

1.....[1]

2.....[1]

(d) The design of the sides of the trolley results in a lot of waste material.
Use sketches and notes to show how the shaped side of the trolley could be made using separate pieces of solid wood.
Show clearly the grain direction on the separate pieces of solid wood.

[3]

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