

Candidate Name

Centre Number

Candidate
Number

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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS****General Certificate of Secondary Education****DESIGN AND TECHNOLOGY
(RESISTANT MATERIALS TECHNOLOGY)****1956/2
1056/2****PAPER 2 HIGHER TIER****Specimen Paper 2003**

1 hour 15 minutes

Candidates answer on the question paper.

TIME 1 hour 15 minutes**INSTRUCTIONS TO CANDIDATES**

Write your name, Centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided on the question paper.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [] at the end of each question or part question.

Dimensions are given in mm unless stated otherwise.

Total marks for this paper is **50**.

FOR EXAMINER'S USE	
1	
2	
3	
4	
5	
TOTAL	

This specimen question paper consists of 11 printed pages and 1 blank page.

- 1 Fig. 1 shows a bookend to be used in a school library. The bookend is made from sheet metal 1.6 mm thick.

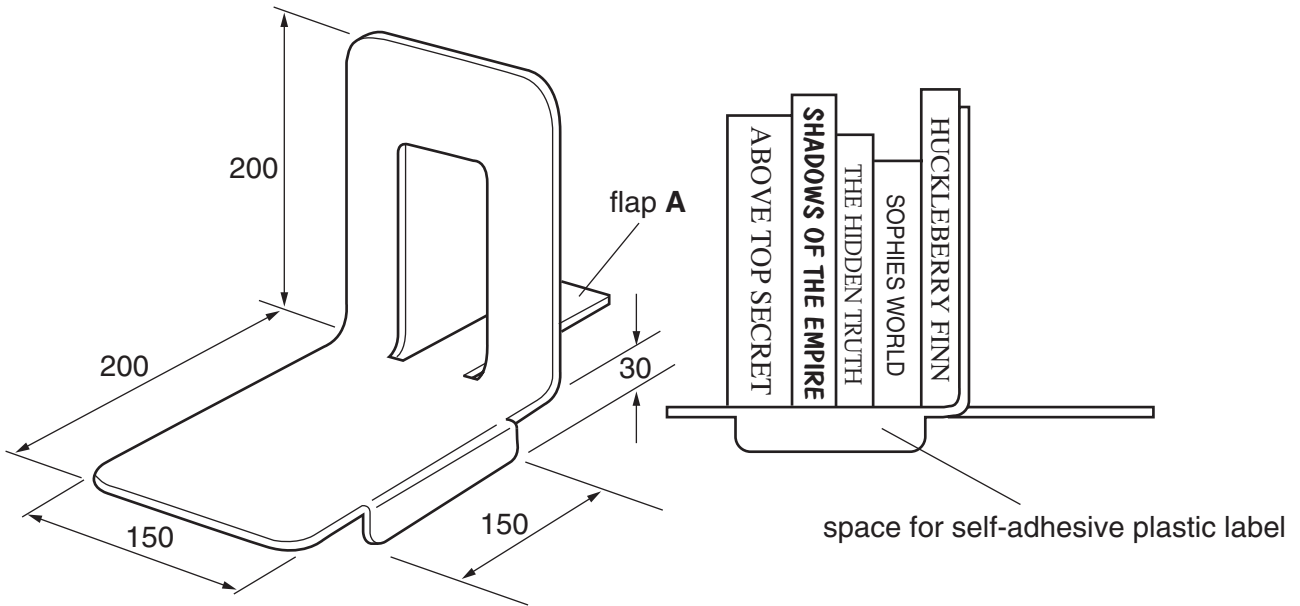


Fig. 1

- (a) (i) The bookend could be made from either sheet aluminium or sheet steel. State **one** reason for choosing either aluminium or steel for the bookend.

Chosen sheet metal _____

Reason _____ [1]

- (ii) State **two** advantages, not including speed, for manufacturing the bookend shape by the process “pressing”.

1 _____ [1]

2 _____ [1]

- (iii) The bookend could also be made from a plastic. Explain **one** advantage to the environment of using metal rather than plastic.

 _____ [2]

- (b) A quantity of self-adhesive plastic labels are required. Each label will give the name of a subject and fit onto the space provided.
Explain clearly how you could use a computer to design and make a suitable self-adhesive plastic label.

[3]

- (c) Quality control would be carried out during manufacture to ensure that the product meets the required standard.
Describe **two** quality control checks you would make during manufacture.

1 _____ [1]

2 _____ [1]

2 Fig. 2 shows a toy fire engine made from solid wood suitable for use by children aged 3-6 years.

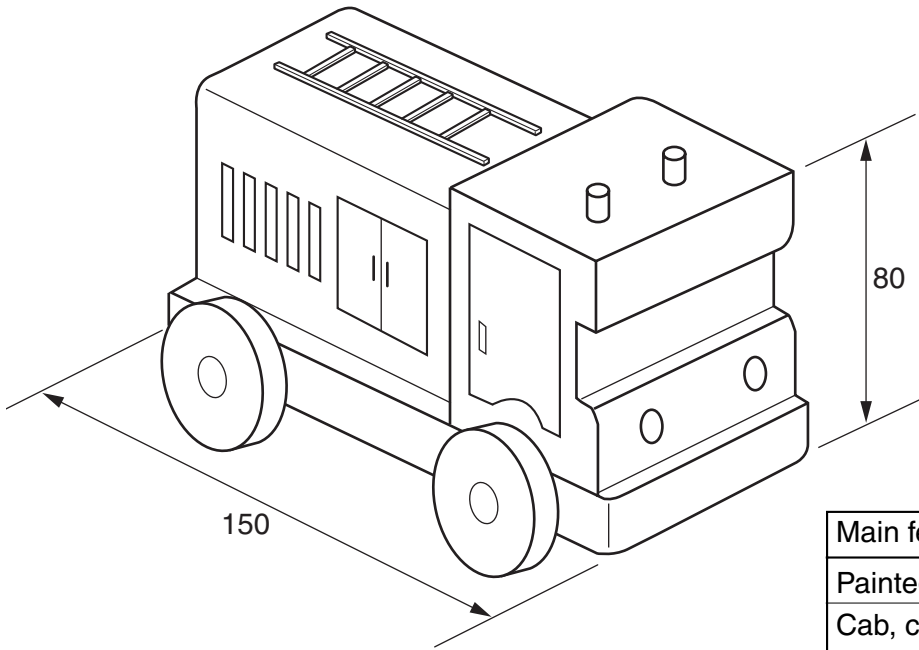


Fig. 2

Main features of fire engine
Painted finish
Cab, chassis, body and wheels permanently attached
Ladders, doors painted on

(a) Name a solid wood commonly used in the manufacture of children’s toys.

_____ [1]

(b) Describe **two** ways in which the design of the fire engine could be considered suitable for a child age 3-6 years.

1 _____ [1]

2 _____ [1]

(c) State **two** ways in which the designer has considered mass-production in the design of the fire engine.

1 _____ [1]

2 _____ [1]

- (d) Children's toys can also be made mainly from plastics.
State **two** reasons why consumers would choose to buy a toy made from plastics rather than solid wood.

1 _____ [1]

2 _____ [1]

- (e) Use notes and sketches to show **one** improvement you could make to the design of the fire engine to make a more exciting toy.

[3]

- 3 Fig. 3 shows the basic design for a small adjustable mirror. The side view shows details of a mirror tile and its backing material.

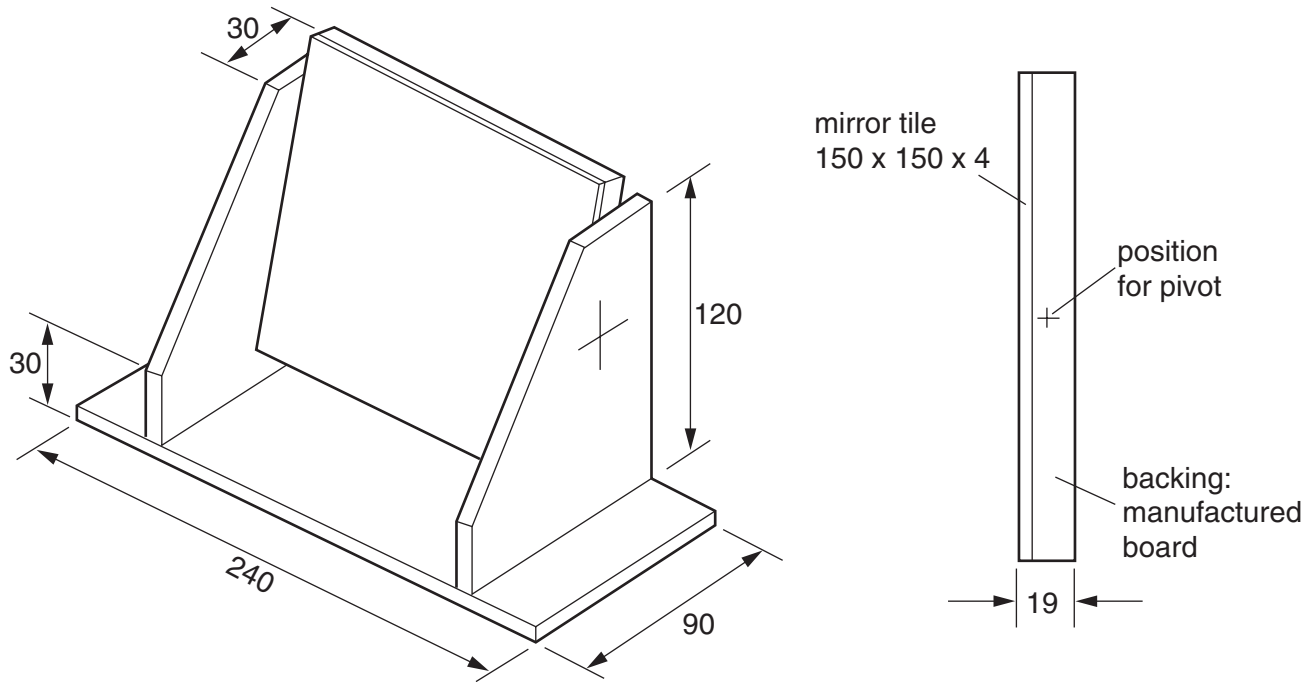
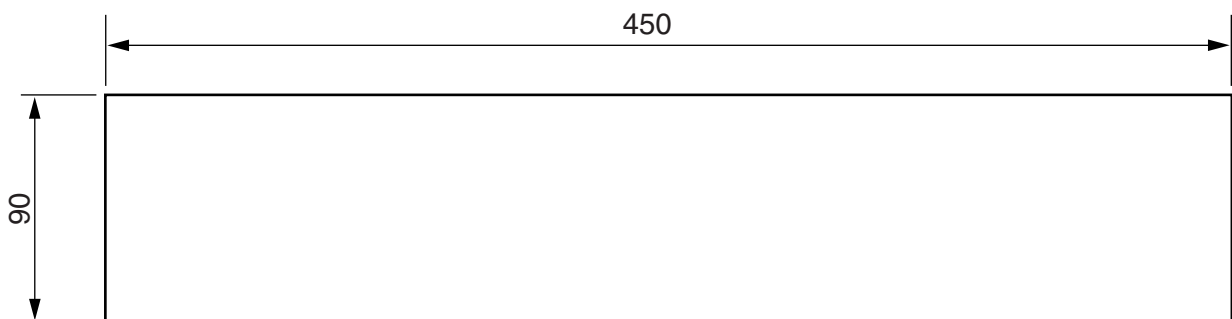


Fig. 3

- (a) The base and uprights are to be made from a single length of hardwood as shown in Fig. 4. Complete Fig. 4 to show how the base and uprights should be marked out to avoid wasting hardwood.



scale 1:3

Fig. 4

[3]

Fig. 5 shows a side view of the adjustable mirror with the right hand upright removed. The mirror is pivoted between the uprights and is to be held at any angle between $0^\circ - 45^\circ$.

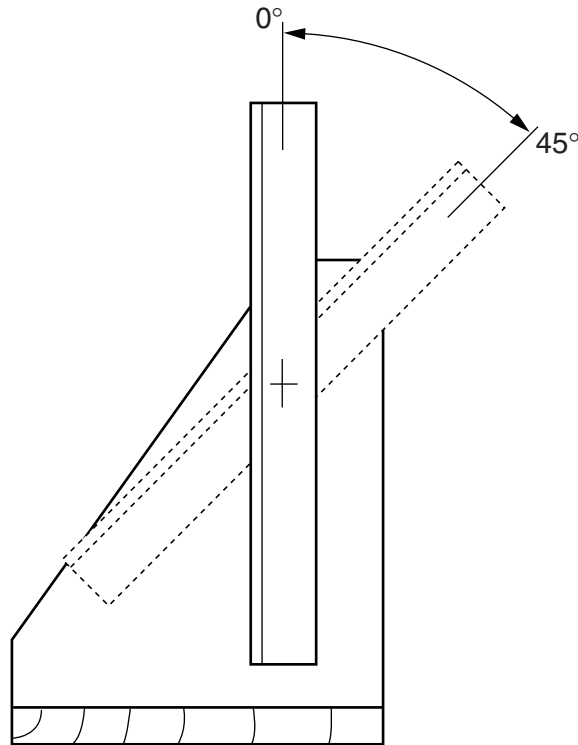


Fig. 5

- (b)** In the space below, use notes and sketches to show a suitable pivot and a locking method by which the mirror can be held at any angle, ($0^\circ - 45^\circ$), between the uprights. Name the materials and any fittings used.

[7]

- 4 Fig.6 shows part of a window display for use by a travel agent. The palm tree moves as shown by the arrows.

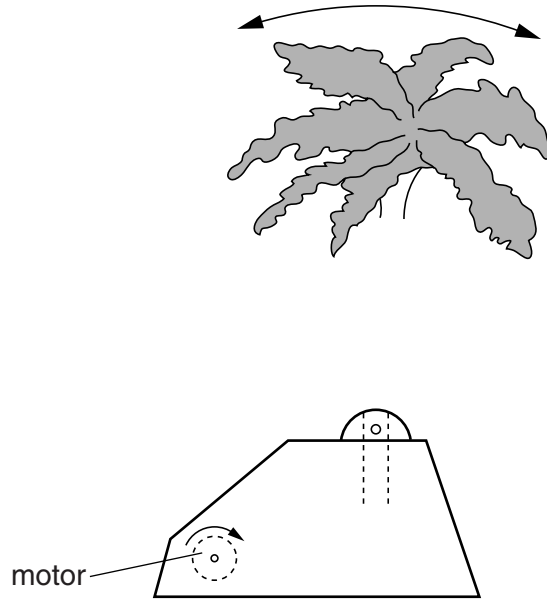


Fig. 6

- (a) Name the type of motion made by the palm tree.

_____ [1]

- (b) Complete Fig. 7 to show the missing linkage mechanism from the motor to the palm tree in order to produce the required motion. Label the diagram. [5]

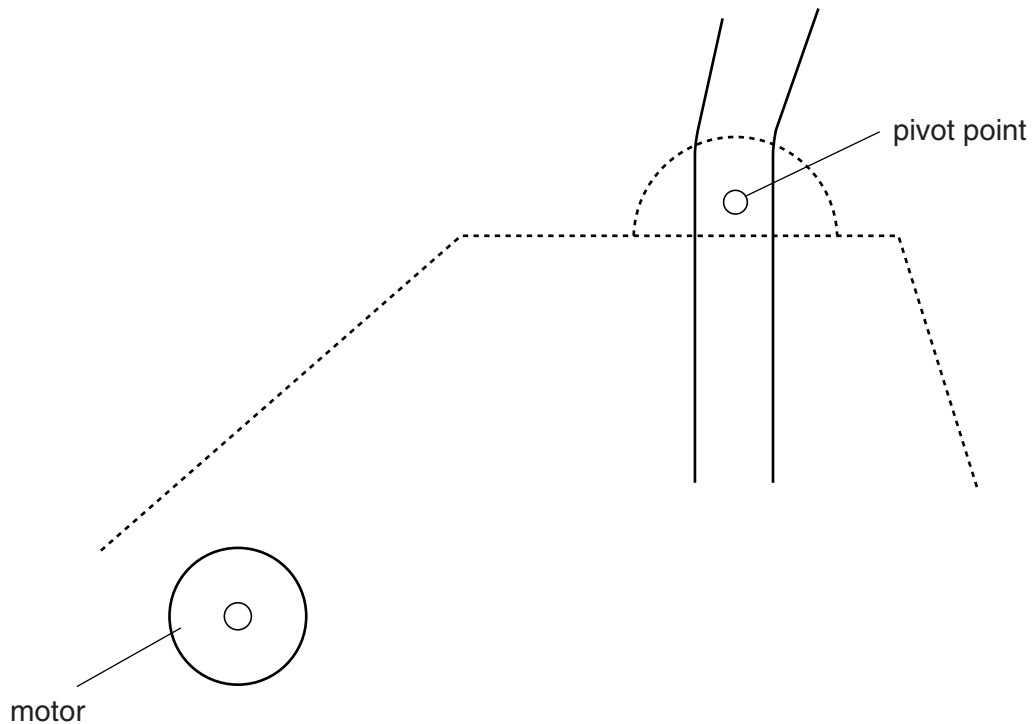


Fig. 7

- (c) Trials have shown that the palm tree moves too much. Use notes and sketches to explain **two** ways in which the linkage can be modified to decrease the sweep of the palm tree.

[4]

5 Fig. 8 shows outline views of a video cassette storage unit to be made in a school workshop.

The unit is to hold 10 video cassettes.

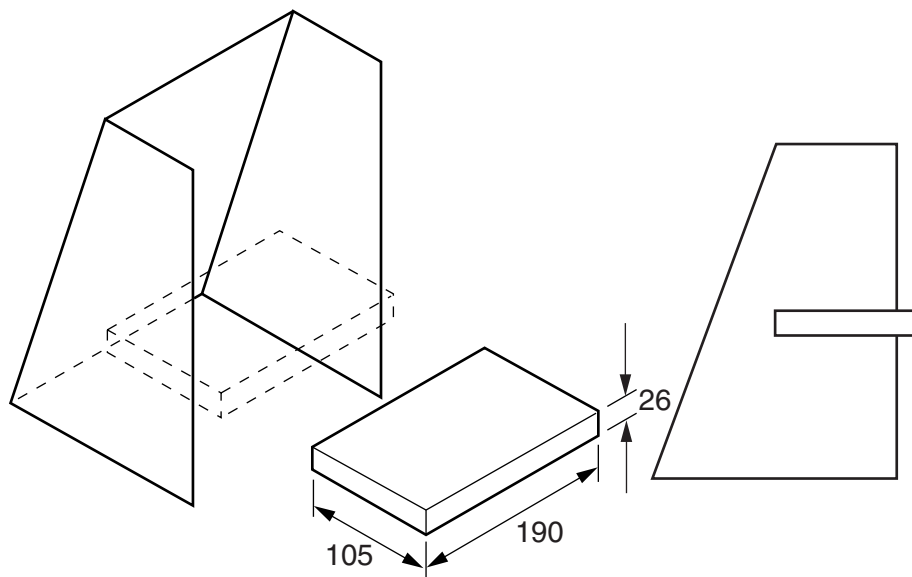


Fig. 8

(a) Using notes and sketches develop a design for the unit.
Your design must show:

- an arrangement for ensuring that the front edges of the video cassettes line up vertically;
- how the video cassettes are easily accessible;
- details of the sizes of your chosen materials.

[6]

(b) In the space below, devise a system, jig or former that would enable **one** part of your design to be manufactured in quantity.

[4]

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