FOR OFFICIAL USE

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**F**

| | | | |
|---|---|---|---|
| Q1 | | Q5 | |
| Q2 | | Q6 | |
| Q3 | | Q7 | |
| Q4 | | Q8 | |

Total

# 0600/27/01

NATIONAL QUALIFICATIONS 2013

MONDAY, 20 MAY
9.00 AM – 10.00 AM

# CRAFT AND DESIGN
## STANDARD GRADE
Foundation Level

**Fill in these boxes and read what is printed below.**

Full name of centre

Town

Forename(s)

Surname

Date of birth
Day Month Year

Scottish candidate number

Number of seat

1 Answer all the questions.

2 Read every question carefully before you answer.

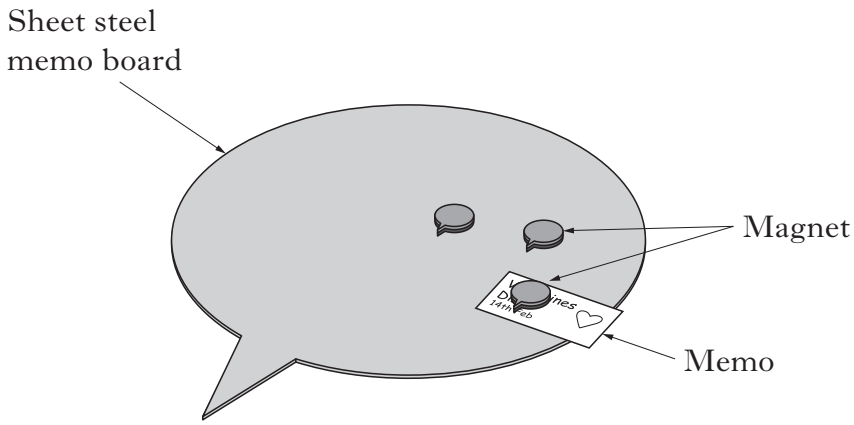
3 Write your answers in the spaces provided.

4 Do **not** write in the margins.

5 All dimensions are given in millimetres.

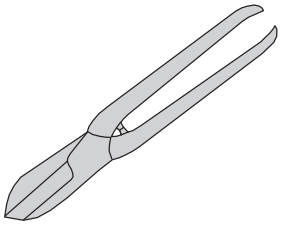
6 Before leaving the examination room you must give this book to the Invigilator. If you do not, you may lose all the marks for this paper.

**1.** A sheet steel memo board is shown below.



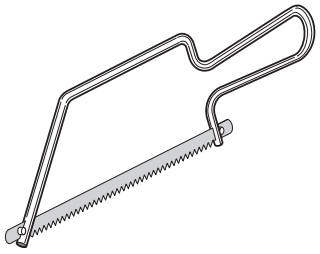

(*a*) The tools shown below were used during the manufacture of the memo board. Tick (✓) the name of each tool.

(i) ☐ Soldering bolt
☐ Snips
☐ Bending bars
☐ Panel saw



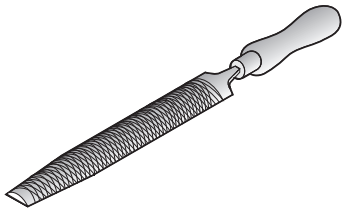
**1 0**

(ii) ☐ Tenon saw
☐ End cutters
☐ Junior hacksaw
☐ Pliers



**1 0**

(iii) ☐ Flat file
☐ Round file
☐ Half round file
☐ Abra file



**1 0**

**1. (continued)**

(*b*) The memo board is made from sheet steel.

Select the property of steel which makes it suitable for the memo board.

- ☐ It conducts electricity
- ☐ It rusts
- ☐ It is magnetic
- ☐ It is easily welded

**10**

(*c*) (i) A paint finish was applied to the memo board.

State a reason for applying a finish.

Reason _____

**10**

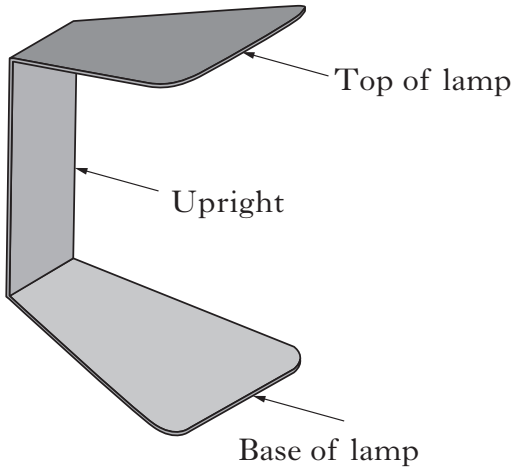
(ii) State how a paint finish could be applied.

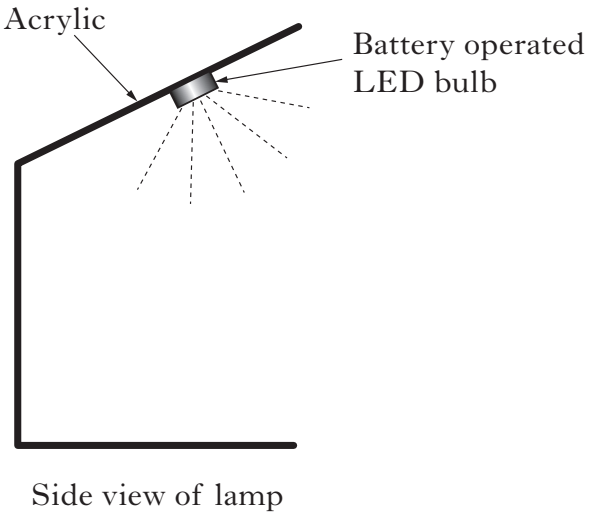
_____

**10**

**[Turn over**

**2.** A freestanding plastic desk lamp is shown below.



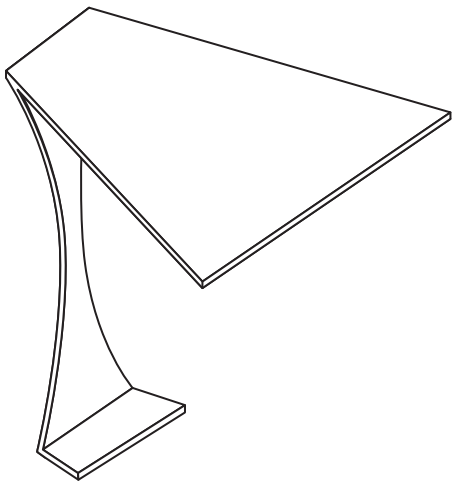

(*a*) The desk lamp was made from acrylic.

Tick (✓) the name of this type of plastic.

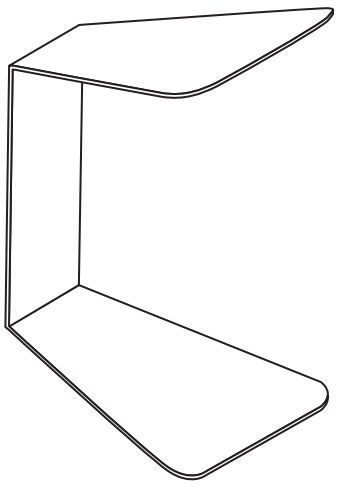
- ☐ Alloy
- ☐ Plastic Laminate
- ☐ Thermoplastic
- ☐ Thermosetting plastic

**1 0**

(*b*) The initial idea and final design are shown below.



Initial Idea



Final Design

State **two** faults in the initial idea.

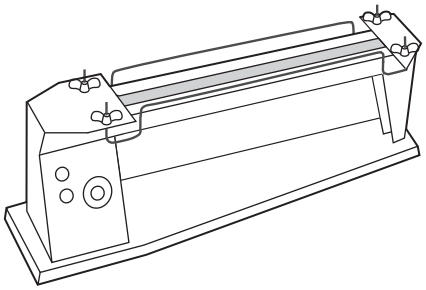
Fault 1 _____ **1 0**

Fault 2 _____ **1 0**

**2. (continued)**

(*c*) (i) The machine shown below was used before bending the acrylic.

Tick (✓) the name of this tool.



- ☐ Forge
- ☐ Anvil
- ☐ Strip heater
- ☐ Oven

**10**

(ii) State what this machine is used for.

_____

**10**

(iii) Other than eye protection, state **one** safety precaution which should be taken when using this machine.

_____

**10**

(*d*) Stages in the manufacture of the desk lamp are shown below in the **wrong order**.

- Cut out shape
- Finish edges
- Bend into shape
- Mark out shape

State which stage should be completed first.

_____

**10**

(*e*) During manufacture of the desk lamp an abrasive sheet was used on the edges.

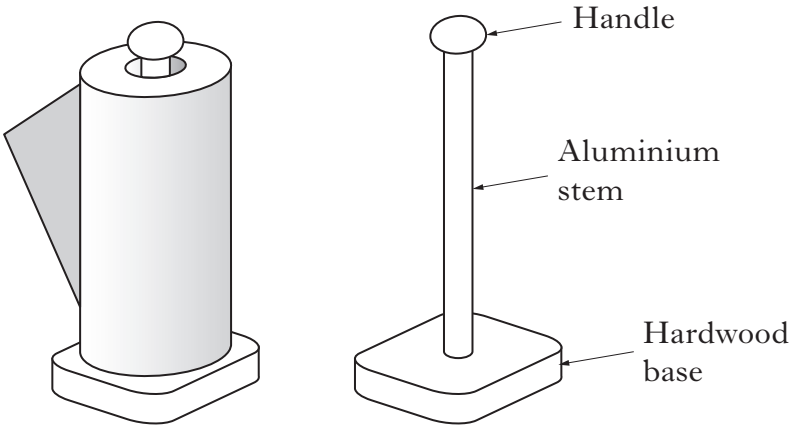
Tick (✓) the name of this abrasive.

- ☐ Cork block
- ☐ Wet and dry
- ☐ Steel wool
- ☐ File card

**10**

**[Turn over**

**3.** A kitchen roll holder made from aluminium and hardwood is shown below.




(*a*) (i) The size of the kitchen roll is important.

Tick (✓) the stage in the design process where the kitchen roll was measured.

- ☐ Evaluation
- ☐ Specification
- ☐ Research
- ☐ Brief

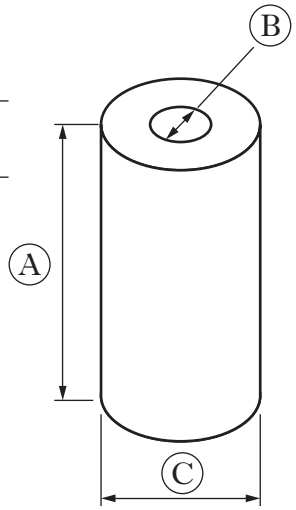
**1 0**

(ii) A kitchen roll is shown with the main sizes marked (A), (B) and (C).

State which size would be used to find the:

length of the aluminium stem _____

diameter of the handle _____




**1 0 1 0**

(*b*) (i) From the list below, select a suitable **hardwood** for the base.

**Pine** **Aluminium** **Beech** **MDF**

_____

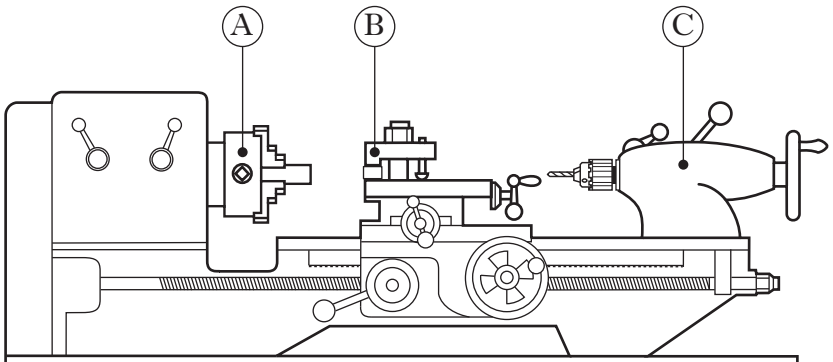
**1 0**

**3. (*b*) (continued)**

(ii) State the name of a machine that can be used to round the corners on the hardwood base.

Name of machine _____ **1 0**

(*c*) The machine shown below was used during the manufacture of the kitchen roll holder.




(Guard has been removed for clarity)

(i) State the name of this machine.

_____ **1 0**

(ii) From the list below, name the parts (A), (B) and (C) of the machine.

**Tail Stock** **Head stock** **3 Jaw chuck** **Tool post** **Saddle**

(A) _____ **1 0**

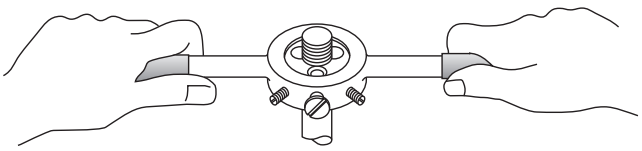
(B) _____ **1 0**

(C) _____ **1 0**

(*d*) The tool shown below was used during manufacture.

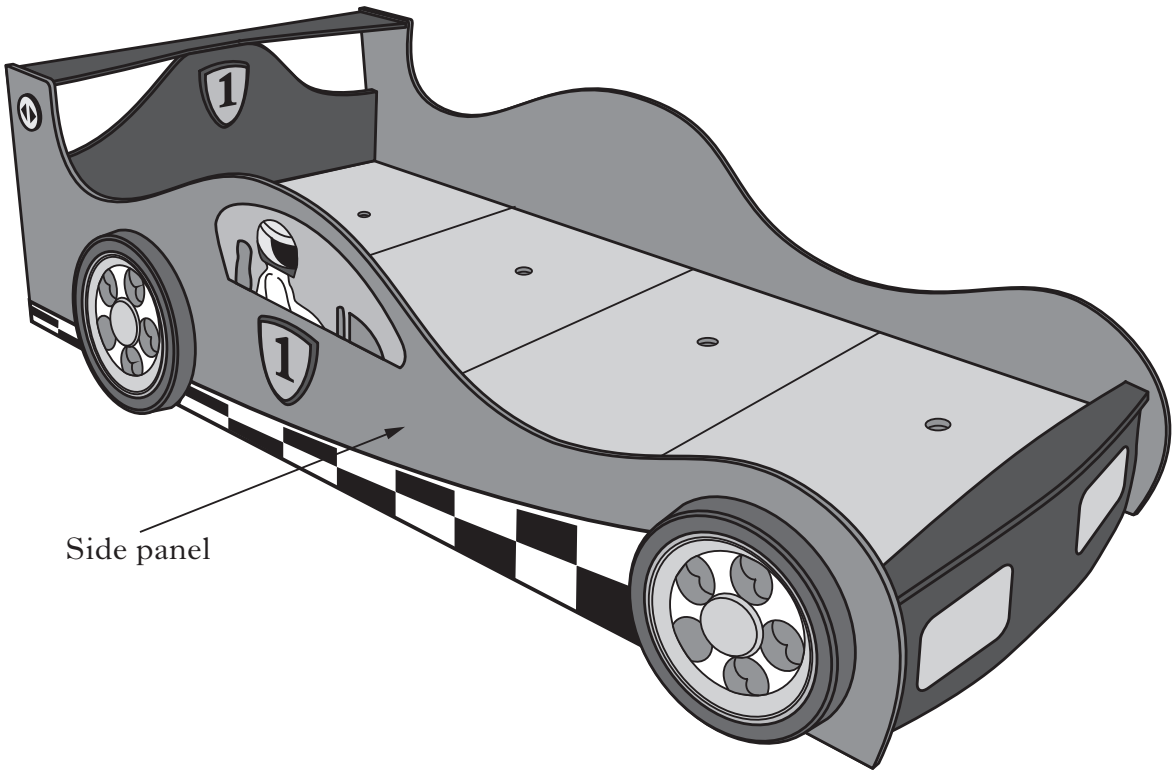
Tick (✓) the name of this tool.

- ☐ Scriber
- ☐ Tap
- ☐ Die
- ☐ Dividers

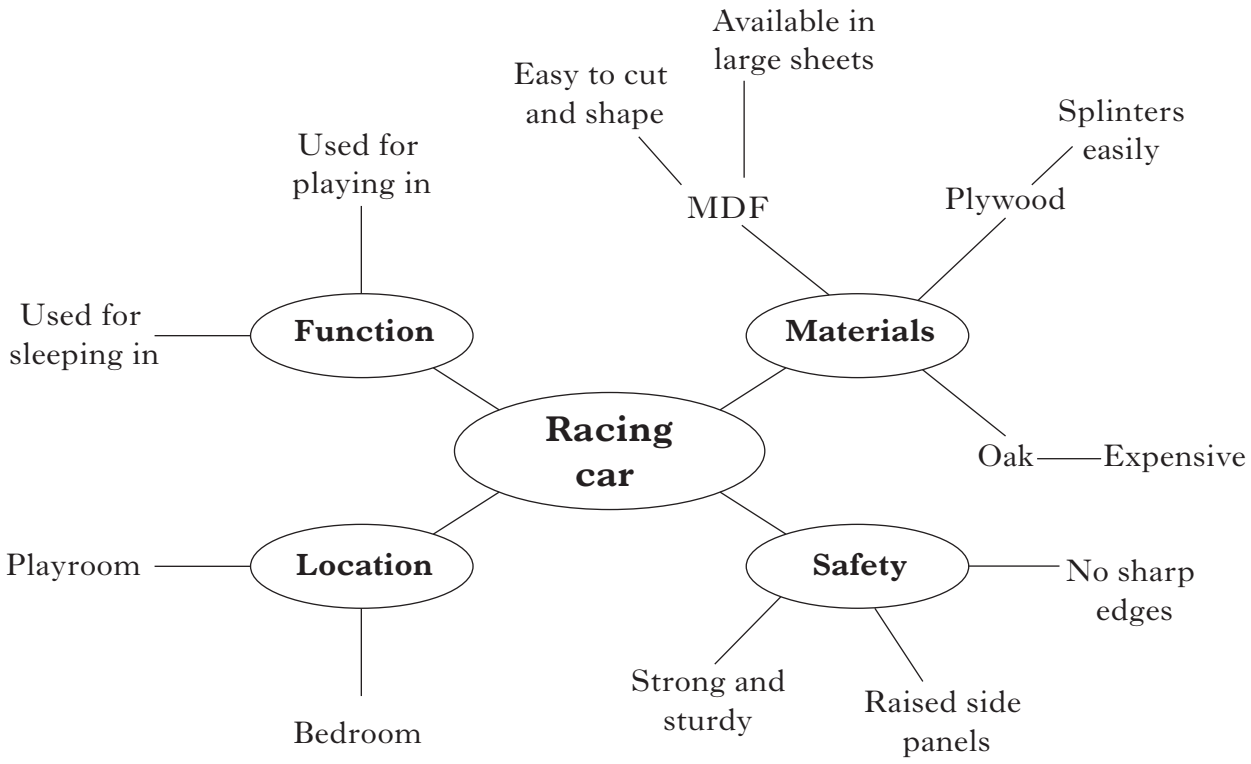


**1 0**

**4.** A child's bed in the shape of a racing car is shown below.




The following **diagram** was produced when designing the bed.



DO NOT WRITE IN THIS MARGIN

**4. (continued)**

(*a*) Using the information in the **diagram** on the page opposite:

(i) State **one** reason why MDF is a suitable material.

_____ **10**

(ii) State a safety feature which helps prevent children falling out of bed.

_____ **10**

(iii) State a function of the bed other than to sleep in.

_____ **10**

(iv) State a reason why oak was rejected as a possible material for the bed.

_____ **10**

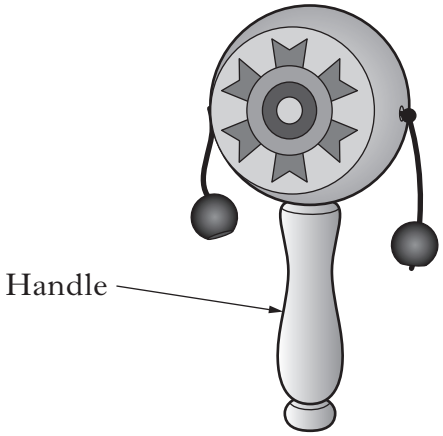
(*b*) An aid was used to draw round to ensure the sides of the bed were identical. Tick (✓) the name of this aid.

- ☐ Template
- ☐ Mould
- ☐ Jig
- ☐ Model

**10**

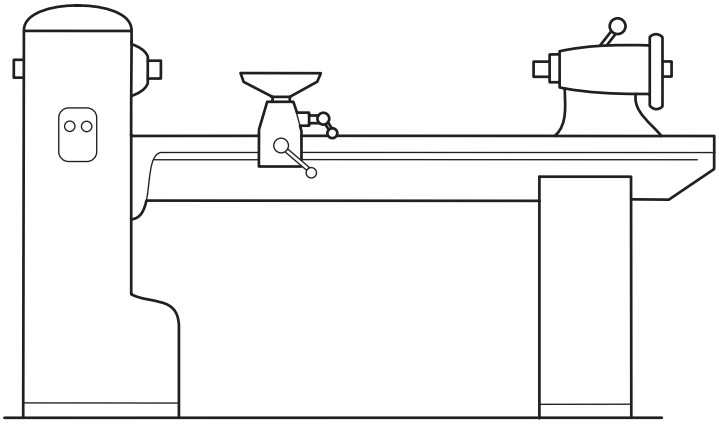
**[Turn over**

**5.** A school enterprise group made the musical instrument shown below to sell at a school fair.




(*a*) The machine shown below was used during the manufacture of the handle.

(i) From the list below select the name for this machine.



**Orbital sander** **Forge** **Metal lathe** **Wood lathe**

Machine _____ **1 0**

(ii) State **two** safety rules that should be followed when using the machine above.

1 _____ **1 0**

2 _____ **1 0**

**5. (continued)**

(*b*) The tools in the table below were used during the manufacture of the musical instrument.

**Draw** a line to connect each tool to its use.

An example has been done for you.

| **Tools** | **Uses** |
|---|---|
| Plane • | • Marking lines at 90° to an edge |
| Tenon Saw • | • Checking diameters |
| Steel Rule • | • Cutting wood to length |
| Outside Callipers • | • Removing waste wood |
| Try Square • | • Measuring the length of wood |

**1 0 1 0 1 0 1 0**

(*c*) A clear finish was applied to the wooden handle.

State the name of a clear finish.

_____

**1 0**

**[Turn over**

**6.** A pair of brass hooks for a bathroom door is shown below.

(*a*) Brass is an alloy.

Tick (✓) the statement which best describes an alloy.

- ☐ It contains iron
- ☐ It does not conduct electricity
- ☐ It is a mixture of two or more metals
- ☐ It is lightweight

**1 0**

(*b*) Brass can be identified by its colour.

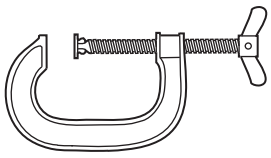
Tick (✓) the colour which best describes brass.

- ☐ Silver
- ☐ Red
- ☐ Black
- ☐ Yellow

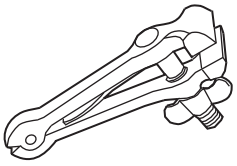
**1 0**

(*c*) A hand vice was used during the manufacture of the hooks.

Tick (✓) the sketch of the hand vice.



☐



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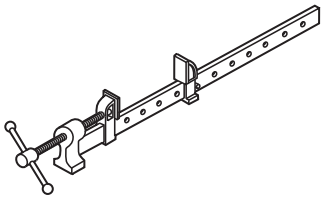
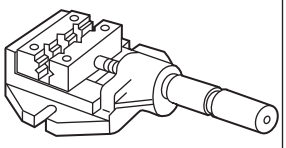


☐



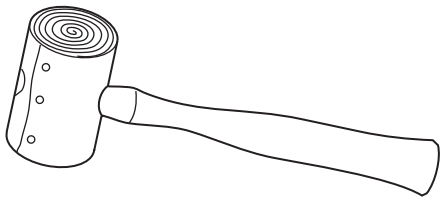
☐

**1 0**

**6. (continued)**

(*d*) The tool shown below was used to bend the hooks.

Tick (✓) the name of the tool.

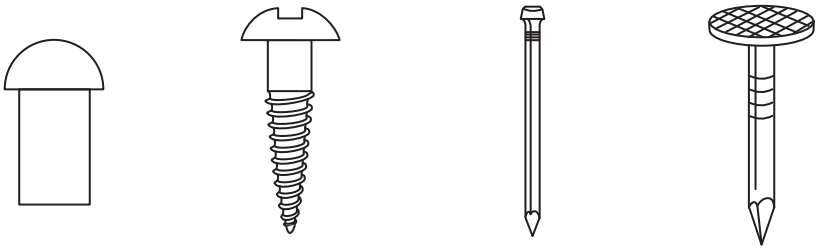


- ☐ Warrington hammer
- ☐ Ball pein hammer
- ☐ Hide mallet
- ☐ Claw hammer

**1 0**

(*e*) (i) A roundhead screw was used to fix the hooks to a wooden door.

Tick (✓) the sketch of the roundhead screw.

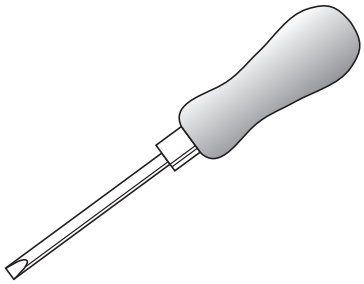


☐ ☐ ☐ ☐

**1 0**

(ii) The tool shown below was used to make a pilot hole for the screw.

Tick (✓) the name of this tool.



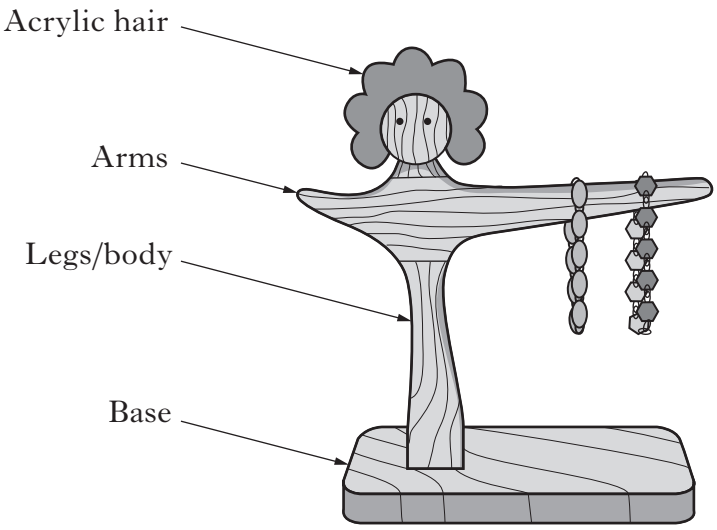
- ☐ Scriber
- ☐ Centre punch
- ☐ Bradawl
- ☐ Nail punch

**1 0**

**[Turn over**

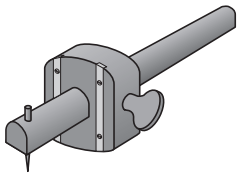
DO NOT WRITE IN THIS MARGIN

**7.** A pupil's design for a jewellery stand is shown below.

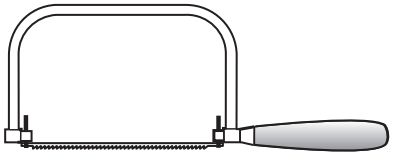



(*a*) A list of tools used to manufacture the jewellery stand is shown below.

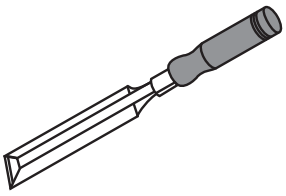
| | | |
|---|---|---|
| **Steel rule** | **Bevel edged chisel** | **Try square** |
| **Marking gauge** | **Coping saw** | **Flat file** |



Tool (A)



Tool (B)



Tool (C)

From the list above select the name of each tool.

(i) Tool (A) _____ **1 0**

(ii) Tool (B) _____ **1 0**

(iii) Tool (C) _____ **1 0**

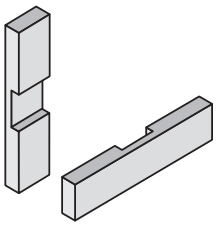
(iv) State a safety precaution when using tool (C).

_____ **1 0**

**7. (continued)**

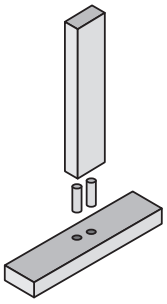
(*b*) The joints shown below were used during the manufacture of the jewellery stand.

Tick (✓) the name of these joints.



(i)
- ☐ Stopped housing
- ☐ Mortise and tenon
- ☐ Corner rebate
- ☐ Cross halving

**1 0**



(ii)
- ☐ Rebate
- ☐ Dowel
- ☐ Housing
- ☐ Butt

**1 0**

(*c*) (i) A white wood glue was used in the joints.

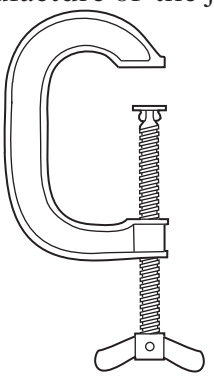
Tick (✓) the name of this glue.

- ☐ Acrylic cement
- ☐ Epoxy resin
- ☐ PVA
- ☐ Impact adhesive

**1 0**

(ii) The tool below was used during the manufacture of the jewellery stand.

Tick (✓) the name of this tool.



- ☐ G clamp
- ☐ Bench vice
- ☐ Sash cramp
- ☐ Machine vice

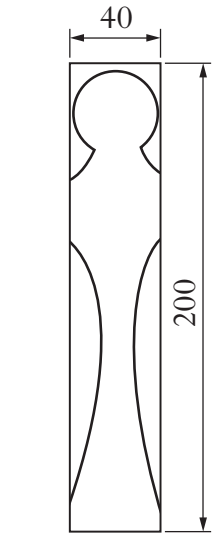
**1 0**

**[Turn over**

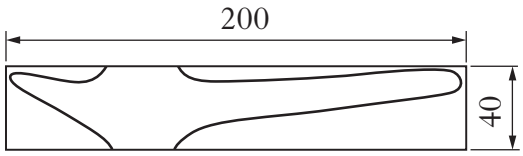
**7. (continued)**

(*d*) Notes and dimensioned sketches of each part of the jewellery stand are shown below.

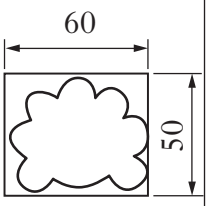
All wood is 20 mm thick.



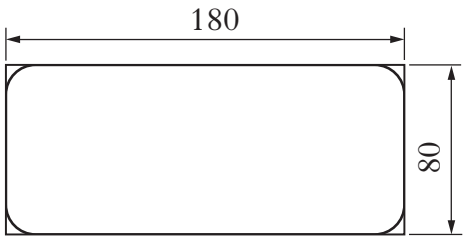

Wooden legs/body




Arms




Acrylic hair



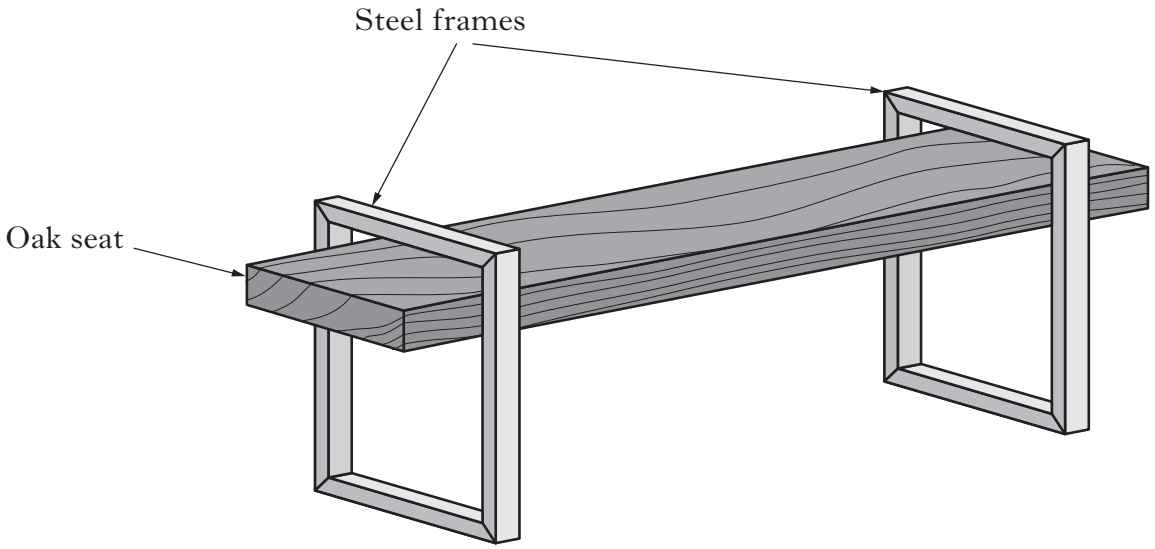

Wooden base

Use the information to complete the table shown below.

| Part | Quantity | Length | Breadth | Thickness | Material |
|---|---|---|---|---|---|
| Legs/body | 1 | | 40 | 20 | Pine |
| Arms | 1 | 200 | | 20 | Pine |
| Base | 1 | 180 | 80 | | Pine |
| Hair | 1 | 60 | 50 | 3 | |

**1 0 1 0 1 0 1 0**

**8.** A bench is shown below.




Some stages in a design process are listed below for making the bench.

**Initial ideas** **Research** **Evaluation** **Design brief**

**Specification** **Cutting list** **Sequence of operations**

At which of the above stages would you find:

(i) instructions for making the bench

Stage _____ **10**

(ii) a range of possible designs

Stage _____ **10**

(iii) a table of materials, sizes and quantities

Stage _____ **10**

(iv) a report on how well it worked

Stage _____ **10**

(v) a list of what the bench must do

Stage _____ **10**

[*END OF QUESTION PAPER*]

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