FOR OFFICIAL USE

F

Total

0600/401

NATIONAL QUALIFICATIONS 2009

MONDAY, 18 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.

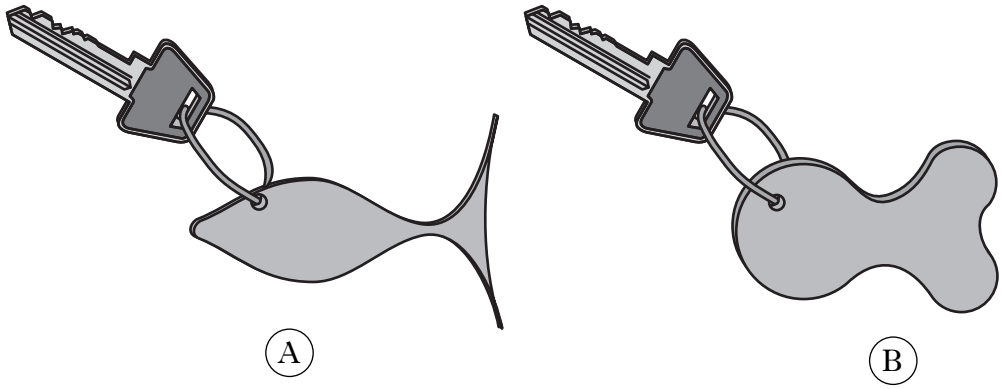
5 All dimensions are given in millimetres.

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.

DO NOT WRITE IN THIS MARGIN

ATTEMPT ALL QUESTIONS

1. Two acrylic key tabs are shown below.



(*a*) List three faults in the design of key tab (A).

Fault 1 _____

Fault 2 _____

Fault 3 _____

10

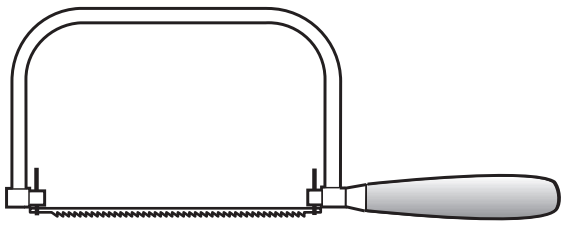
(*b*) Key tab (B) is made from acrylic. Tick (✓) the name of this type of plastic.

- ☐ Alloy
- ☐ Plastic laminate
- ☐ Thermosetting plastic
- ☐ Thermoplastic

10

(*c*) The tool shown was used to cut the outline of key tab (B). Tick (✓) the correct name of this tool.

- ☐ Tenon saw
- ☐ Jigsaw
- ☐ Coping saw
- ☐ Hacksaw

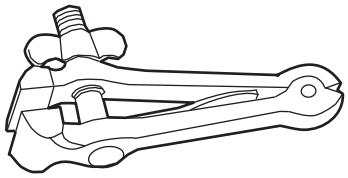


10

1. (continued)

(*d*) The tool shown below was used to hold the acrylic when drilling. Tick (✓) the name of this tool.

- ☐ Sash cramp
- ☐ G cramp
- ☐ Machine vice
- ☐ Hand vice



1 0

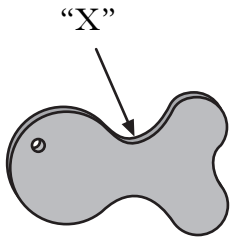
(*e*) Acrylic can crack easily when drilling. Tick (✓) a method that could prevent cracking.

- ☐ Mark with a centre punch
- ☐ Drill quickly
- ☐ Support the acrylic on a piece of scrap wood
- ☐ Keep the protective cover on the acrylic

1 0

(*f*) A file was used to finish edge "X". Tick (✓) the name of a suitable file.

- ☐ Abra
- ☐ Half round
- ☐ Flat
- ☐ Square



1 0

(*g*) The stages for finishing the edge of the acrylic key tab are given below in the **wrong order**.

- Polish
- Cross file
- Use wet and dry paper
- Draw file

(i) State which stage would be completed **first**.

1 0

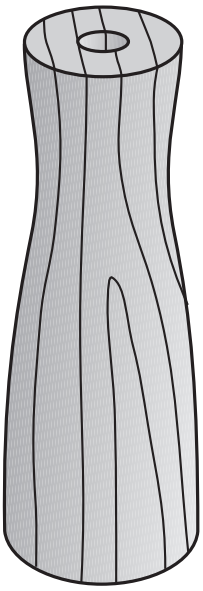
(ii) State which stage would be completed **last**.

1 0

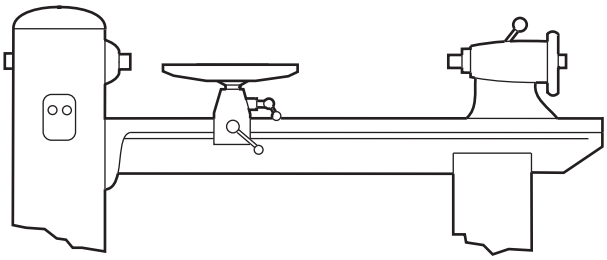
[Turn over

DO NOT WRITE IN THIS MARGIN

2. A wooden base for a table lamp is shown below.



(*a*) (i) The base was manufactured on the machine shown below.



State the name of this machine.

1 0

(ii) Tick (✓) the name of the process carried out by this machine.

- ☐ Forging
- ☐ Casting
- ☐ Turning
- ☐ Threading

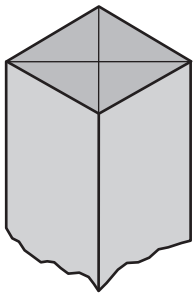
1 0

2. (continued)

(*b*) A list of tools used to prepare the wooden blank is given below. From this list write the name of the tool used at each stage.

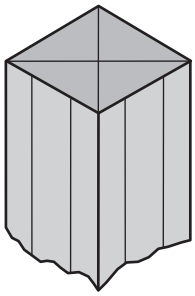
Tenon Saw *Marking Gauge* *Smoothing Plane* *Rule and Pencil*

Stage 1 – Mark diagonals



Tool _____

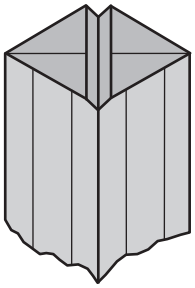
Stage 2 – Score line parallel to edges



Tool _____

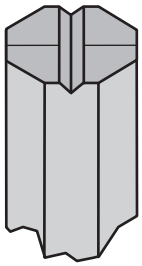
1 0 1 0

Stage 3 – Cut vee groove



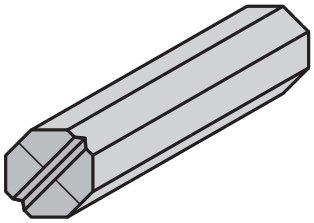
Tool _____

Stage 4 – Remove corners



Tool _____

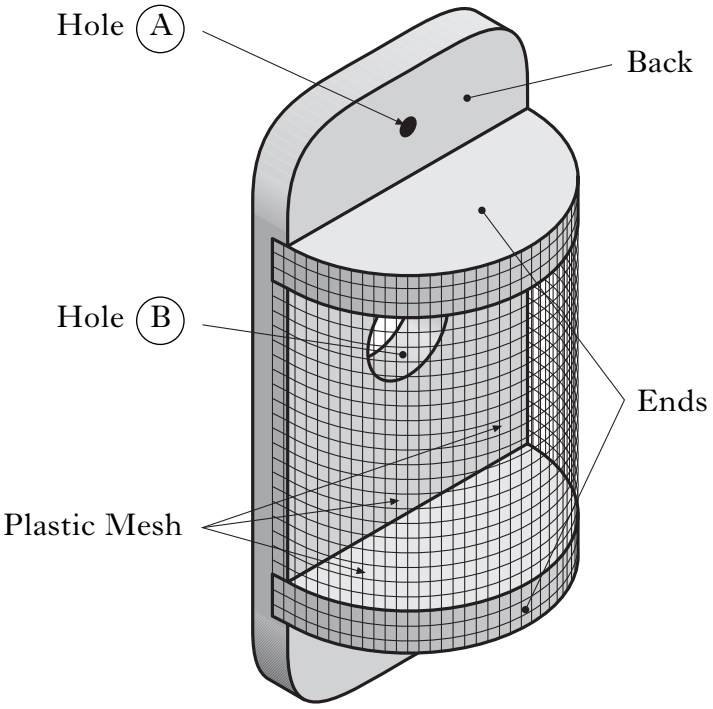
1 0 1 0



Finished Blank

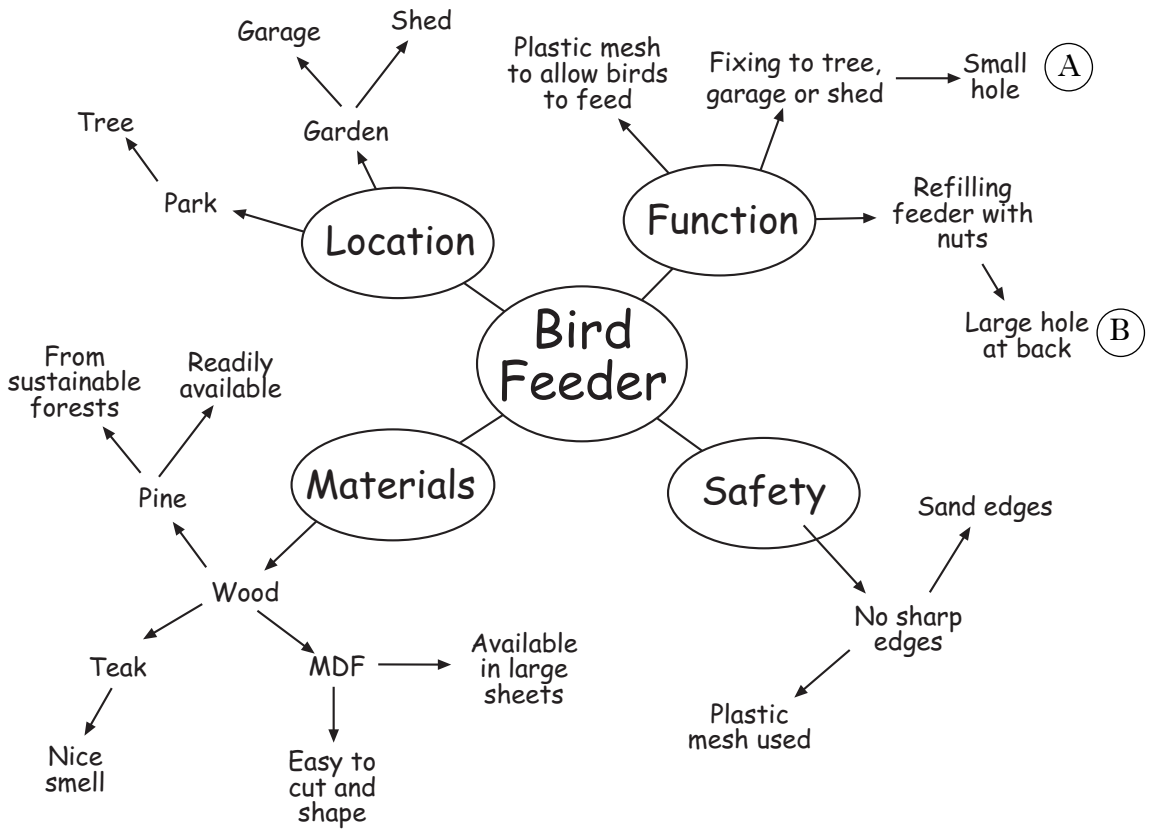
[Turn over

3. A pupil's design for a bird feeder is shown below.



Bird Feeder

The following **diagram** was produced when designing the bird feeder.



3. (continued)

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

(i) state a suitable **location** within a park for the bird feeder; **10**

(ii) state **one reason** why pine is a suitable **material**; **10**

(iii) state a method to ensure there are **no sharp edges** on the **pine**; **10**

(iv) state the **function** of hole (A) ; **10**

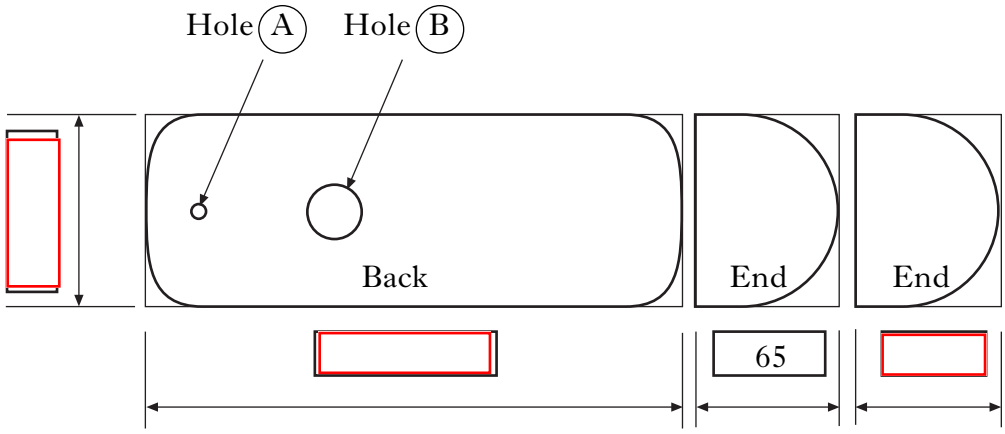
(v) state the **function** of hole (B) . **10**

(*b*) The cutting list and working drawing for the bird feeder are shown below .

Part	Material	Quantity	Length	Width	Thickness
Back	Pine	1	240	90	18
End	Pine	2	65	90	18

Cutting list

Transfer three sizes from the cutting list to the correct boxes on the working drawing. (One has been completed for you.)

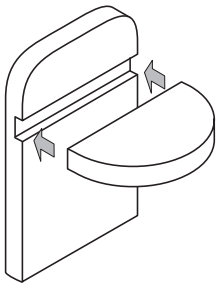


Working drawing **10 10 10 10**

3. (continued)

(*c*) The joint shown below was used in the manufacture of the bird feeder.

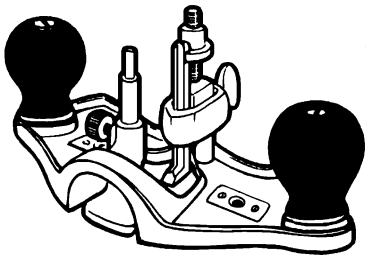
Tick (✓) the name of this joint.



- ☐ Dowel
- ☐ Stopped housing
- ☐ Mortice and tenon
- ☐ Through housing

1 0

(*d*) The tool shown below was used in the manufacture of the bird feeder. Tick (✓) the name of this tool.



- ☐ Saw
- ☐ Chisel
- ☐ Brace
- ☐ Router

1 0

DO NOT WRITE IN THIS MARGIN

4. Six safety procedures are listed below.

A. *Wear a leather apron*

B. *Both hands behind blade*

C. *Use machine vice to hold material*

D. *Use tongs to hold material*

E. *Store in tool rack*

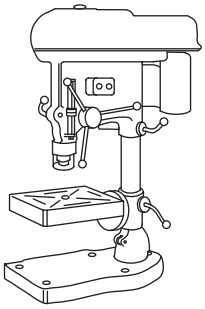
F. *Ensure safety guard is down*

From the list, state which **two** procedures would be followed when using:

(*a*) a pedestal drill

1. _____

2. _____

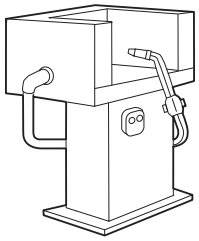


1 0 1 0

(*b*) a forge

1. _____

2. _____



1 0 1 0

(*c*) a chisel

1. _____

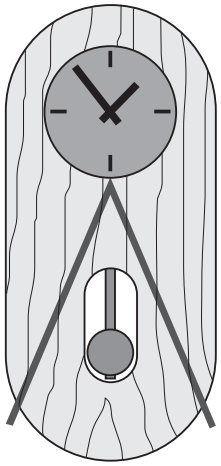
2. _____

1 0 1 0

[Turn over

DO NOT WRITE IN THIS MARGIN

5. A clock is shown below.



(*a*) The design folio for the clock contained the following stages.

Brief
Research
Specification
Ideas
Solution
Sequence of operations
Evaluation

At which of the above stages would you find:

(i) a list of what the clock must do;

Stage [ ] **10**

(ii) a report on how well the clock worked;

Stage [ ] **10**

(iii) a list of instructions of how to manufacture the clock;

Stage [ ] **10**

(iv) a short statement outlining the problem?

Stage [ ] **10**

5. (continued)

(*b*) The following materials were considered during the design process.

Oak *Plywood* *Copper* *Pine*

Using the materials listed complete the table below.

Description	Appearance	Material
Manufactured board	Made up of layers of timber	
Softwood	Yellow and knotty	
Non-ferrous metal	Reddish-brown colour	
Hardwood	Close grained timber	

10

10

10

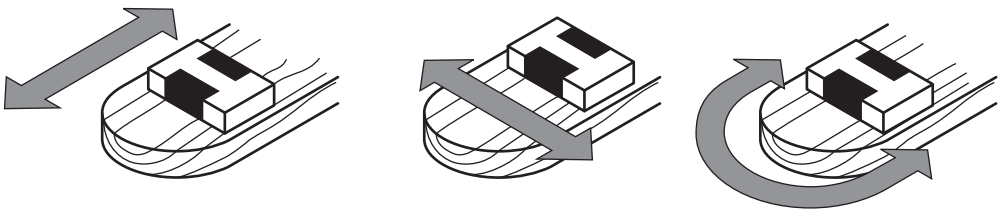
10

(*c*) State the name of a **machine tool** that could be used to finish the curved top of the clock.

10

(*d*) Abrasive paper was used to remove the pencil marks from the timber.

Tick (✓) the sketch below that shows the correct method.

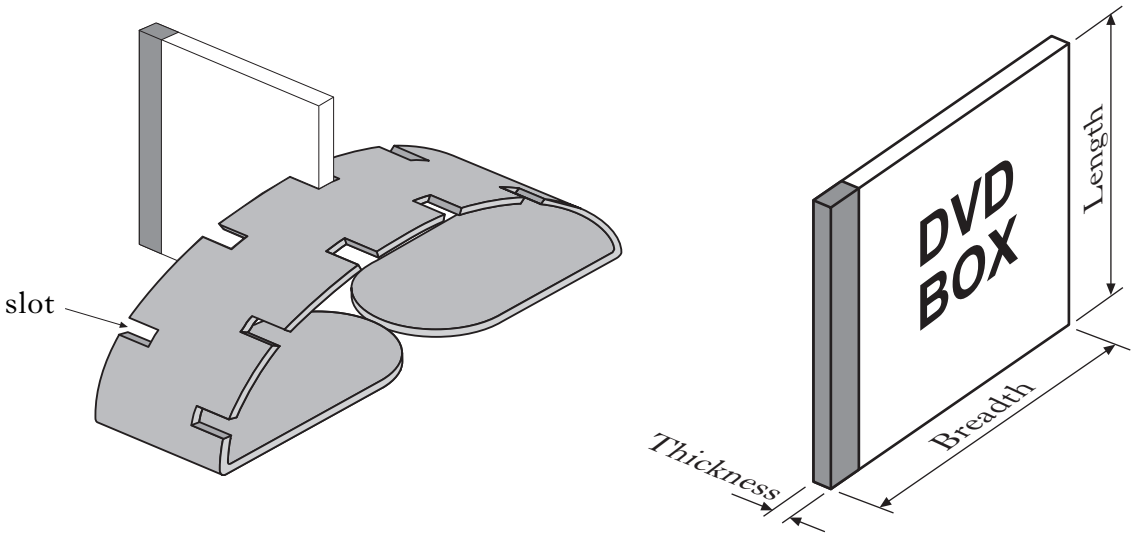


10

[Turn over

DO NOT WRITE IN THIS MARGIN

6. A metal holder for DVD boxes is shown below.



(*a*) The DVD holder is made from a silver coloured metal that does not rust.

Tick (✓) the name of this metal.

- ☐ Mild steel
- ☐ Brass
- ☐ Cast iron
- ☐ Aluminium

1 0

(*b*) (i) Tick (✓) **one** piece of information that will determine the width of the slots.

- ☐ Title of DVD
- ☐ Breadth of DVD box
- ☐ Thickness of DVD box
- ☐ Length of DVD box

1 0

(ii) Tick **one** piece of information that will determine the total number of slots.

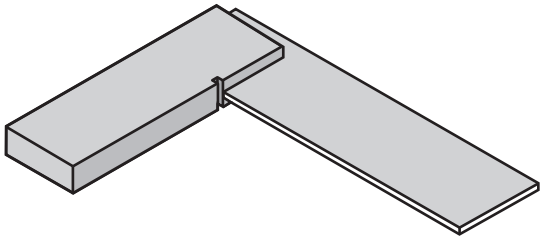
- ☐ Breadth of DVD box
- ☐ Length of DVD box
- ☐ Title of DVD
- ☐ Number of DVD boxes to be stored

1 0

6. (continued)

(*c*) The following tools were used in marking out the DVD holder. Tick (✓) the name of each tool.

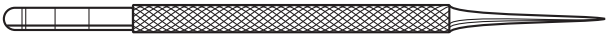
(i)



- ☐ Centre punch
- ☐ Nail punch
- ☐ Engineer's square
- ☐ Scriber

10

(ii)

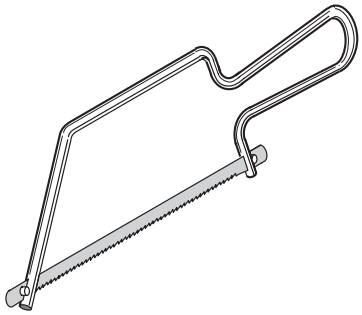


- ☐ Odd leg callipers
- ☐ Scriber
- ☐ Centre punch
- ☐ Engineer's square

10

(*d*) The following tools were used in the manufacture of the DVD holder.

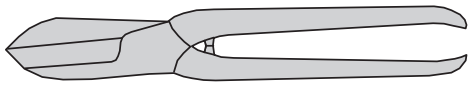
(i) Tick (✓) the name of this saw.



- ☐ Coping saw
- ☐ Tenon saw
- ☐ Bandsaw
- ☐ Junior hacksaw

10

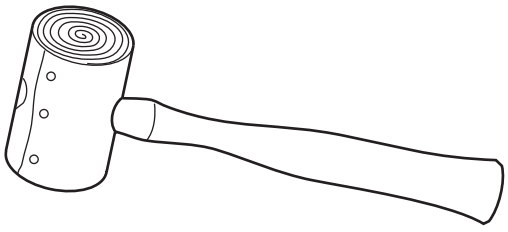
(ii) State the name of this tool.



☐

10

(iii) Tick (✓) the name of the tool used to bend the holder.

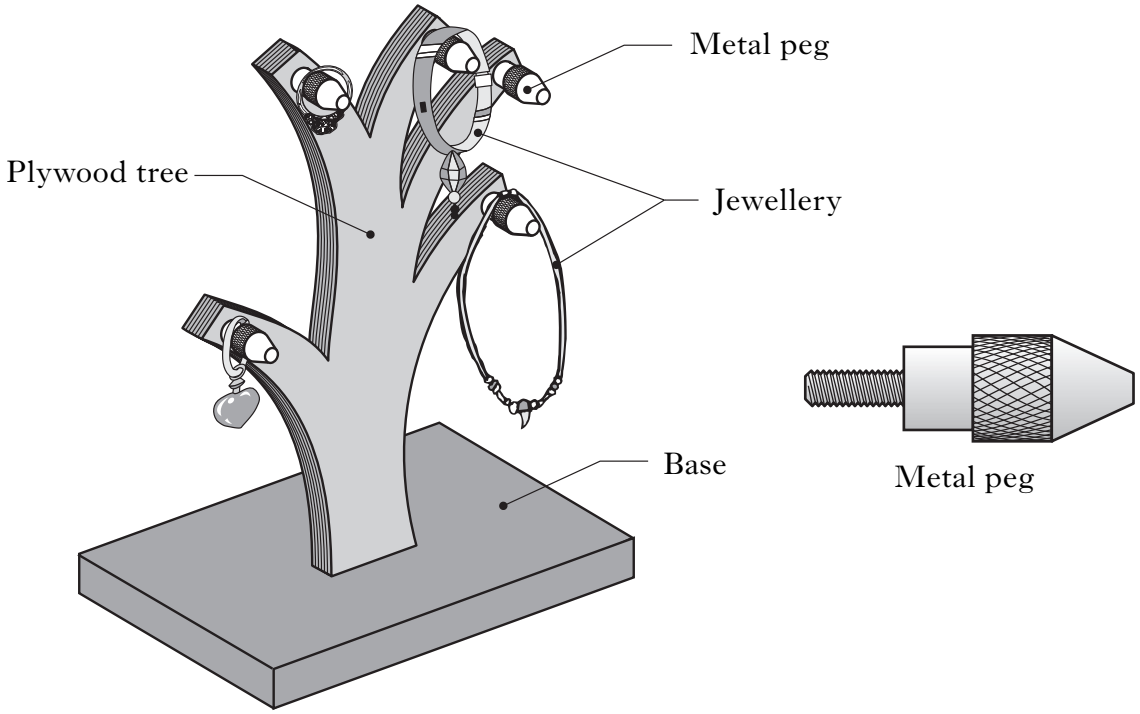


- ☐ Ball pein hammer
- ☐ Claw hammer
- ☐ Hide mallet
- ☐ Cross pein hammer

10

[Turn over

7. A jewellery stand is shown below.



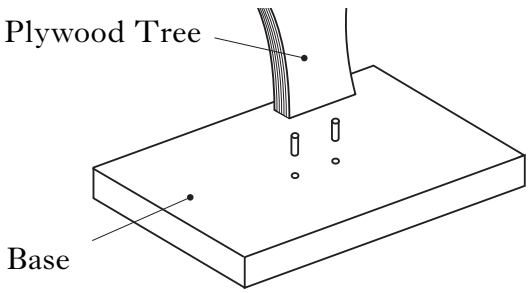
(*a*) The tree shape was cut from card to help with the marking out. Tick (✓) the name given to this card shape.

- ☐ Former
- ☐ Template
- ☐ Mask
- ☐ Jig

1 0

(*b*) The plywood tree was attached to the base using the joint shown below. Tick (✓) the correct name of this joint.

- ☐ Cross halving
- ☐ Butt
- ☐ Mortise and tenon
- ☐ Dowel

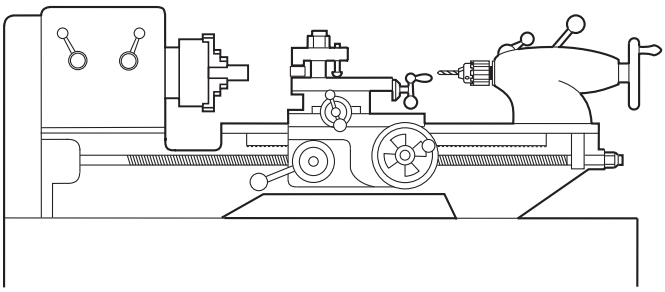


1 0

7. (continued)

(*c*) The pegs were manufactured on the machine shown below. Tick (✓) the name of this machine.

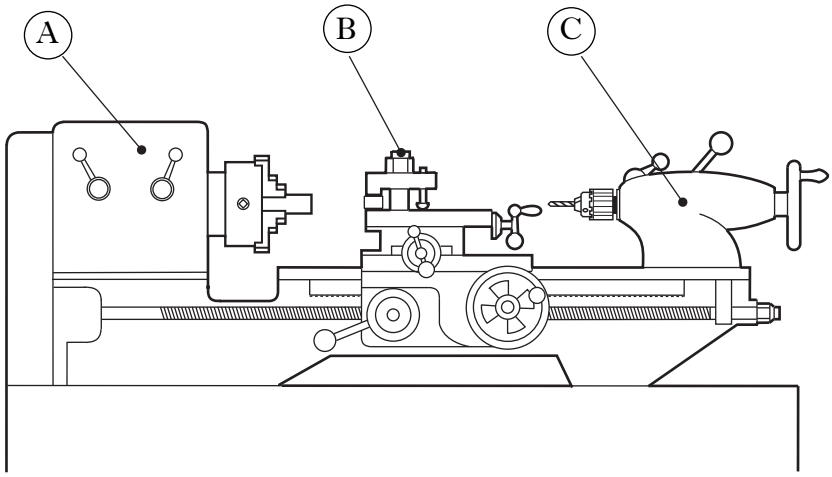
- ☐ Metal lathe
- ☐ Mortise machine
- ☐ Pedestal drill
- ☐ Belt sander



10

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

Tool post *3 jaw chuck* *Tail stock* *Head stock*



(A) _____ **10**

(B) _____ **10**

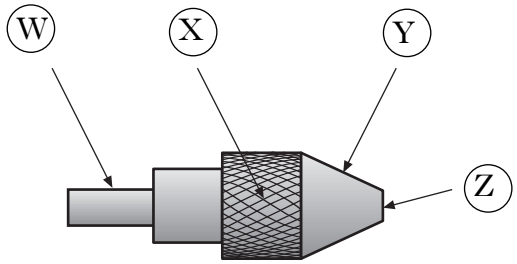
(C) _____ **10**

[Turn over for Question 7(*e*) on Page sixteen

7. (continued)

(*e*) From the list below, name the processes (W), (X), (Y) and (Z) used in the manufacture of the pegs.

Facing *Knurling* *Parallel turning* *Taper turning*



Process (W) _____ **10**

Process (X) _____ **10**

Process (Y) _____ **10**

Process (Z) _____ **10**

[*END OF QUESTION PAPER*]