FOR OFFICIAL USE

N5

National Qualifications 2025

Mark

X862/75/02 Practical Woodworking

WEDNESDAY, 7 MAY
1:30 PM – 2:30 PM

X8627502

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Number of seat

Date of birth
Day Month Year

Scottish candidate number

Total marks — 60

Attempt ALL questions.

You may use a calculator.

Write your answers clearly in the spaces provided in this booklet. Additional space for answers is provided at the end of this booklet. If you use this space you must clearly identify the question number you are attempting.

Use **blue** or **black** ink.

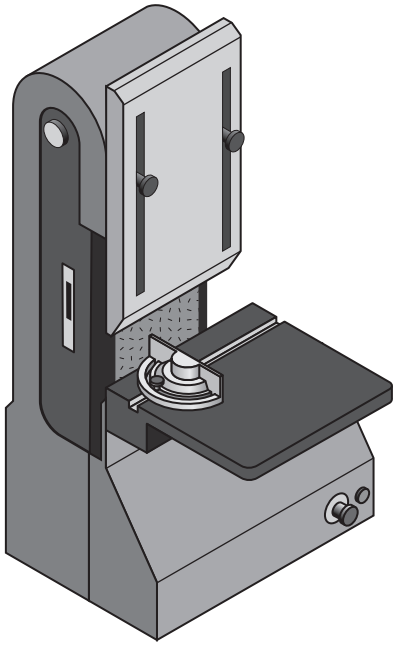
Before leaving the examination room you must give this booklet to the Invigilator; if you do not, you may lose all the marks for this paper.

Total marks — 60

Attempt ALL questions

MARKS | DO NOT WRITE IN THIS MARGIN

1. (a) The machine shown below is used to manufacture wooden products.



(i) State the name of this machine. **1**

(ii) Describe two health and safety checks, other than ensuring dust extraction is turned on, that must be carried out to this machine **before** switching it on. **2**

Check 1

Check 2

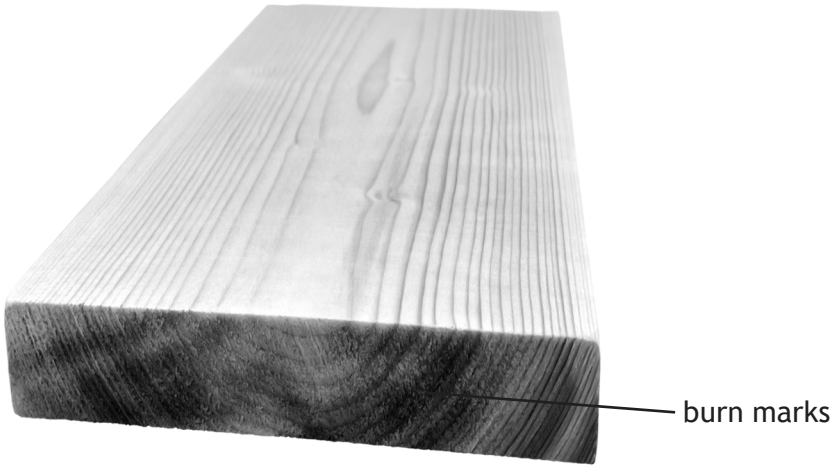
(iii) Describe two **personal** health and safety precautions, other than ensuring long hair is tied back, that must be taken **before** switching on this machine. **2**

Precaution 1

Precaution 2

1. **(continued)**

After using the machine shown opposite, burn marks were visible on the end grain of the wood.



(b) Describe, giving two responses, how to avoid burn marks. **2**

1

2

[Turn over

1. (continued)

(c) (i) Wood must be prepared before applying a finish.

Describe the process of surface preparation by completing the table below.

You must complete the stages in the correct order. The third stage has been completed for you. **3**

Stage	Process
1	
2	
3	Wet the grain to raise it.
4	

(ii) State two factors to consider when choosing an appropriate finish for a woodworking project. **2**

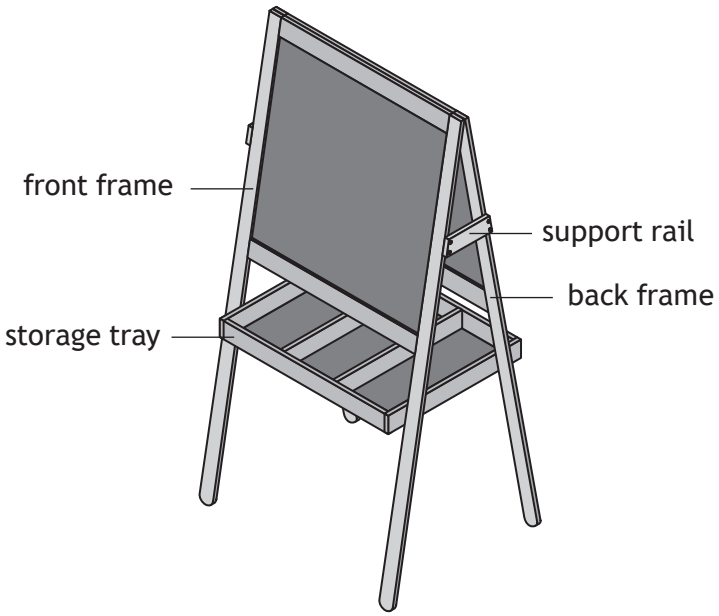
1 _____

2 _____

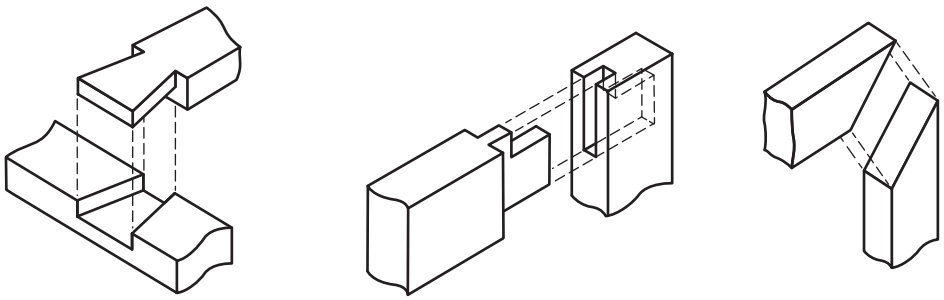
[Turn over for next question

DO NOT WRITE ON THIS PAGE

2. A local toy company manufactures a range of wooden toys. One of their products is a chalkboard, shown below.



(a) The company considered different joints to manufacture the frames.



A B C

(i) State the names of the joints shown above. **3**

Joint A

Joint B

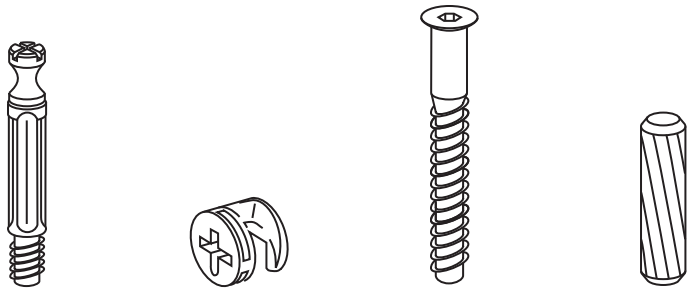
Joint C

2. (a) (continued)

(ii) Identify which of the joints shown opposite **does not** show end-grain **after assembly**, by ticking (✓) the table below. **1**

Joint A	
Joint B	
Joint C	

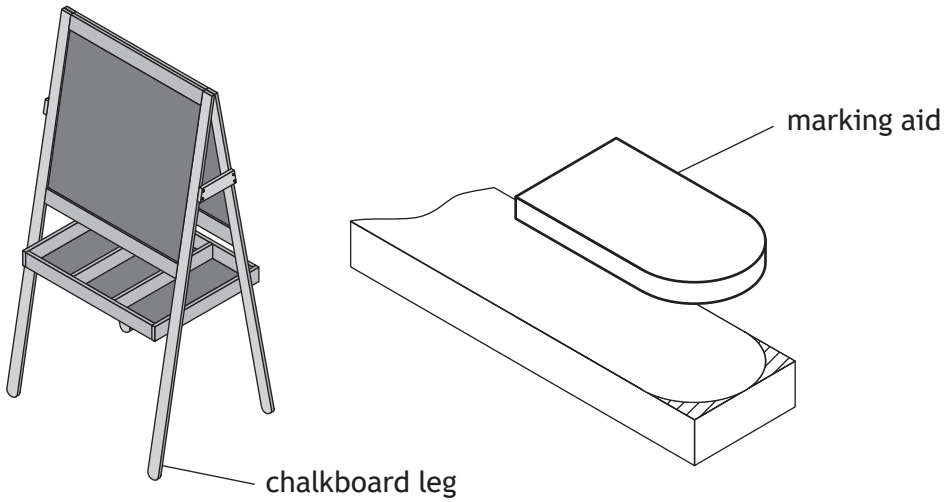
(iii) Alternative jointing methods were considered for the manufacture of the frames, such as the knock down fixings shown below.



Describe one advantage of using knock down fixings instead of traditional joints. **1**

2. (continued)

(b) As part of the frame, the chalkboard legs are rounded at the ends.



(i) The marking aid shown above was used to mark out all four legs.

State the name of this type of marking aid. **1**

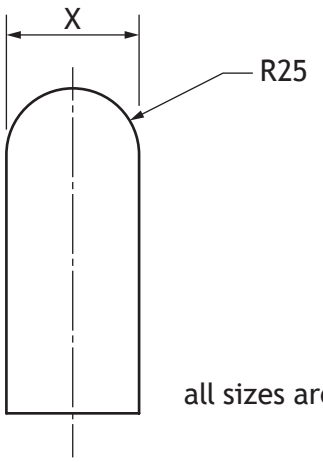
(ii) Explain two advantages of using this marking aid instead of alternative marking out methods. **2**

Advantage 1

Advantage 2

2. (b) (continued)

(iii) The radius of the rounded end on the marking aid is shown below.



all sizes are in mm

Calculate the width of material (size X) required to manufacture the chalkboard legs. **1**

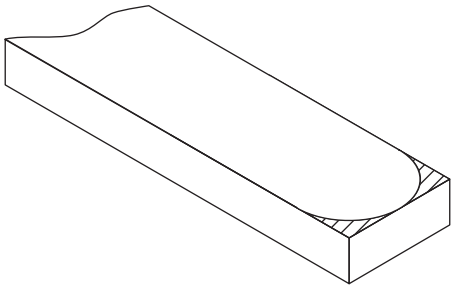
X =

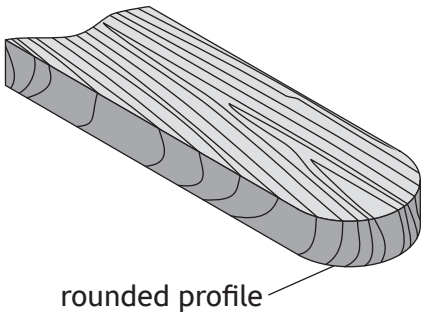
[Turn over

2. (b) (continued)

(iv) Describe two stages of **manufacture** to produce the rounded end shown below, making reference to tools and processes.

You may use sketches to support your answer. **2**



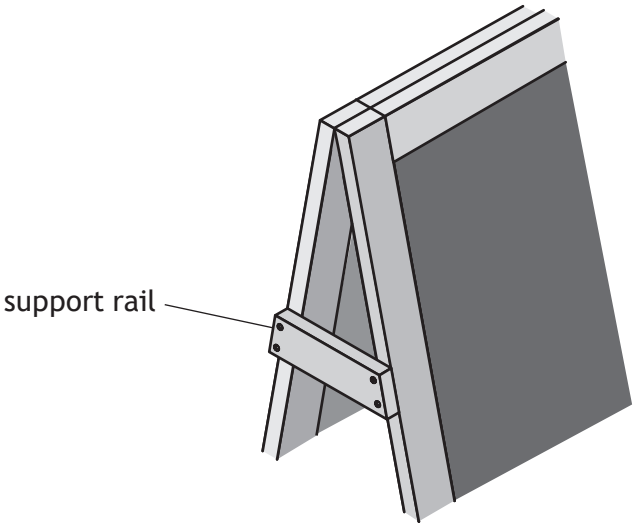


Stage 1

Stage 2

2. (continued)

(c) The two frames of the chalkboard are attached to each other using support rails.



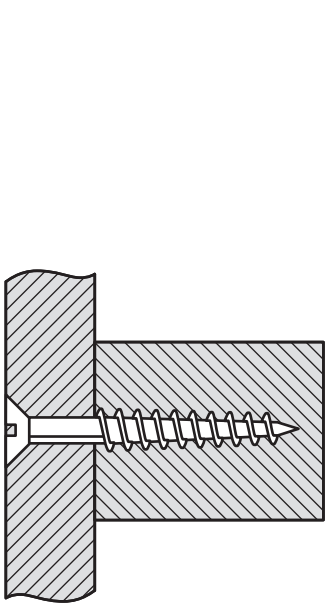
The tool shown below was used in the manufacture of the support rail.

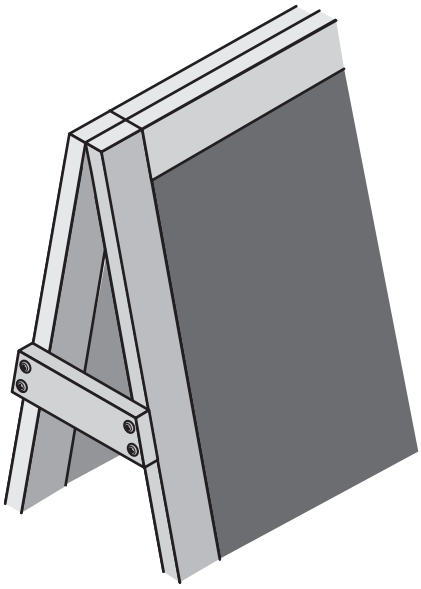
(i) State the name of the tool. **1**

(ii) Describe the purpose of this tool. **1**

2. (continued)

(d) Countersink screws are used to attach the support rails to the sides of the chalkboard frames as shown below.





(i) Describe one benefit of using a countersink screw. **1**

(ii) The support rails are manufactured using left over material from the manufacture of the frames to reduce the environmental impact.

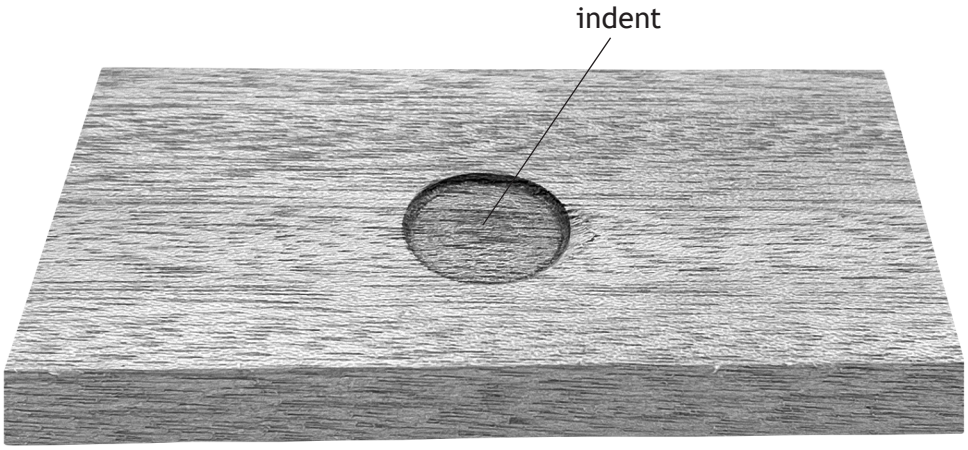
Describe **one other way** waste wood can be reused, repurposed or recycled within a workshop. **1**

2. (continued)

(e) Before gluing, the frames were dry cramped. The tool shown below was used in the dry cramping process.

(i) State the name of this tool. **1**

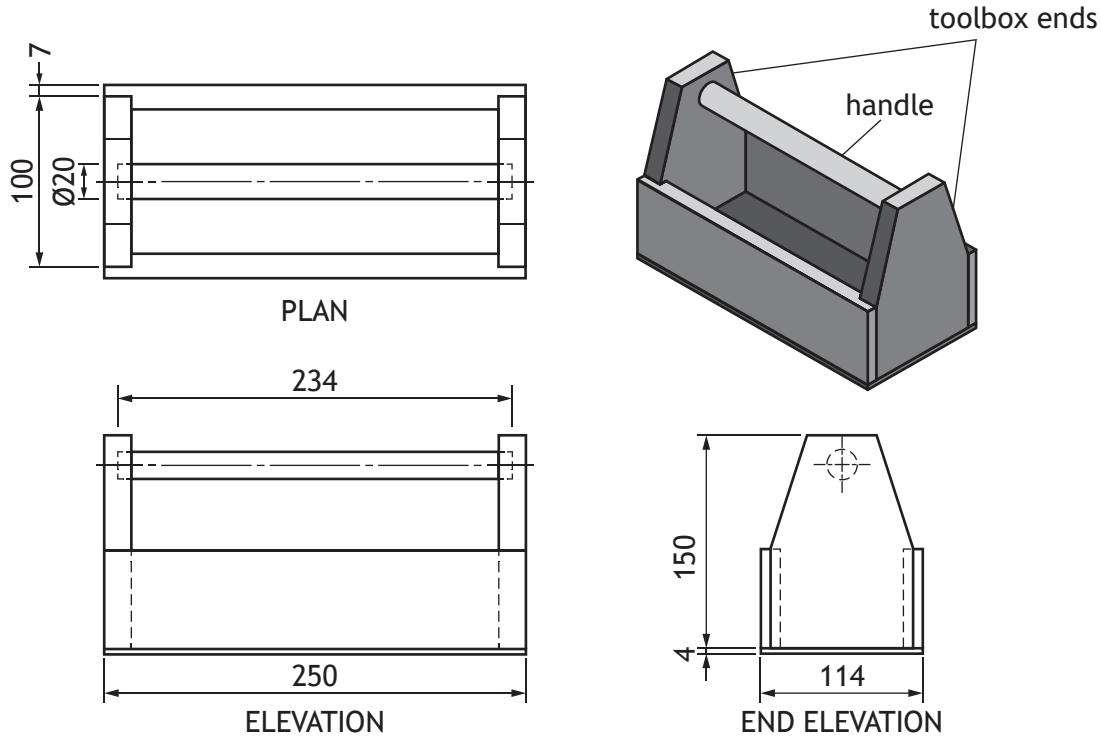
(ii) During the dry cramping process small indents are made on the wood by the cramp.



Describe how these indents could be avoided. **1**

[Turn over

3. A working drawing of a toolbox is shown below.



all sizes are in mm

	DATE	DRAWING No.
	SCALE 1:2	TOOL BOX

(a) State, using the working drawing shown above, the length of the handle. **1**

Handle length = _____

(b) The working drawing shown above is drawn to a scale of 1:2.

Describe what a drawing scale of 1:2 means. **1**

_____

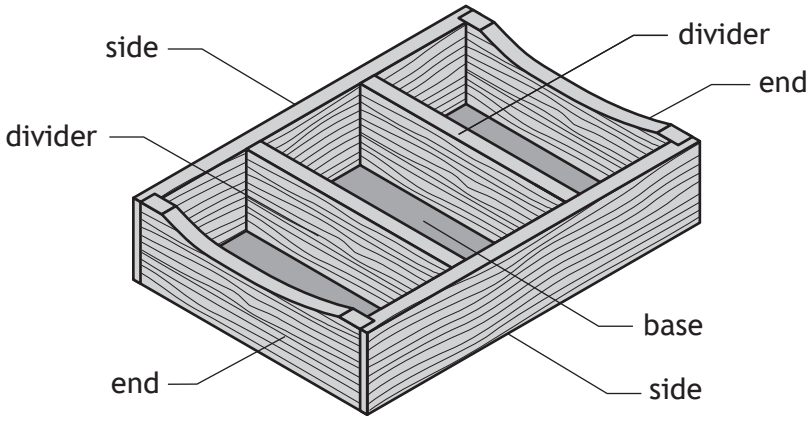
(c) After a working drawing is produced, the manufacturer can use it to create a cutting list.

State two pieces of information you can find on a cutting list. **2**

1 _____

2 _____

4. A storage tray made from a softwood and a manufactured board is shown below.



A number of manufactured boards could be used for the base of the storage tray.

(a) Identify the manufactured boards and their construction methods by completing the table below.

Hardboard has been completed for you.

Manufactured board	Construction method	
Hardboard	Made from wood fibres which are steam heated together and pressed to form large sheets.	
(i)	Strips of softwood glued together and covered with a veneer of hardwood.	1
Plywood	(ii)	1
(iii)	Small wood chips glued together and compressed into boards.	1
(iv)	Wood fibres mixed with glue and compressed together under pressure.	1

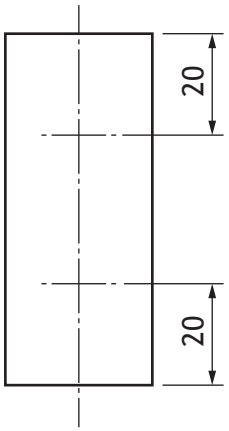
[Turn over

4. (continued)

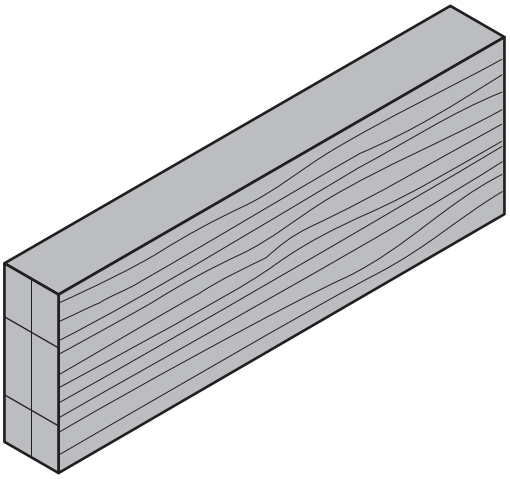
(b) The dividers are attached to the sides of the storage tray using a dowel joint.

Describe how to measure and mark out the dowel joint shown below, making reference to tools and processes. **2**

You may use sketches to support your answer.



all sizes are in mm



MARKS

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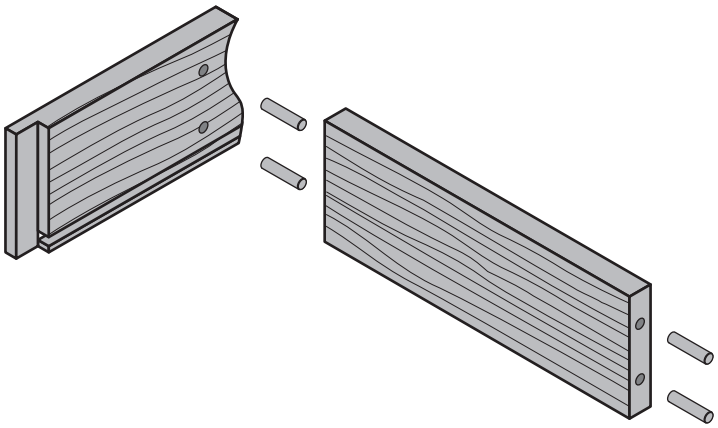
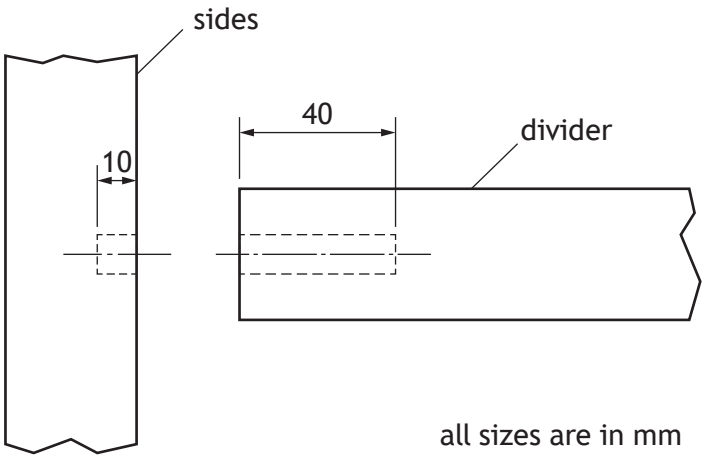
(c) A working drawing for the dowel joint is shown below.

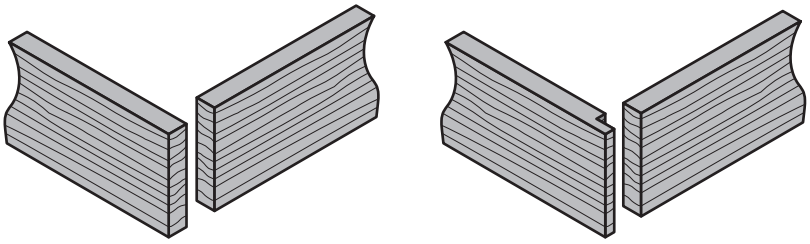




all sizes are in mm

(i) Calculate, using the diagram above, the maximum length of each dowel. **1**

The manufacturer decided to use a corner rebate to join the sides to the ends. The rebate joint is used instead of a butt joint for its strength and ease of assembly.



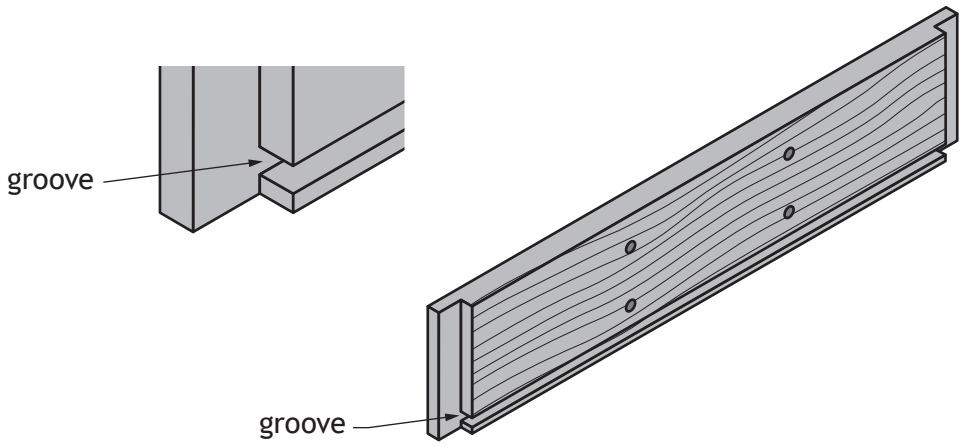
butt joint rebate joint

(ii) Explain why a rebate joint is stronger than a butt joint. **1**

4. (c) (continued)

(iii) Describe how a rebate joint is easier to assemble than a butt joint. **1**

(d) A groove is cut around the inside of the storage tray to allow for the base to be secured.



(i) State the name of a plane that can be used to cut this groove. **1**

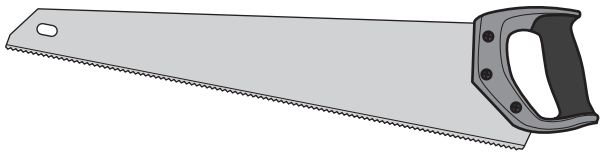
(ii) Describe two advantages of using a groove to attach the base, instead of gluing and pinning. **2**

Advantage 1

Advantage 2

4. (d) (continued)

The saw shown below was used to cut the base before it was attached to the bottom of the storage tray.

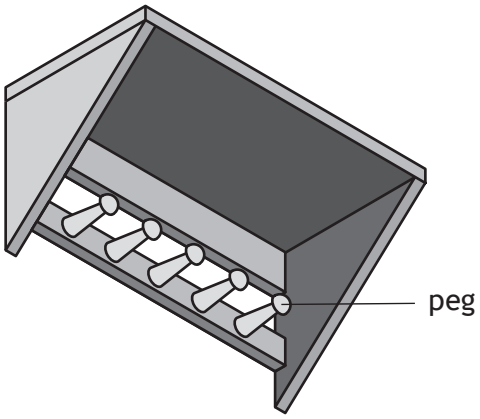


(iii) Identify the saw shown above by ticking (✓) the table below. **1**

Coping saw	
Jigsaw	
Panel saw	
Tenon saw	

[Turn over

5. (a) An outdoor tool rack made from hardwood is shown below.



(i) State the name of a hardwood that is suitable for outdoor use and becomes harder with age. **1**

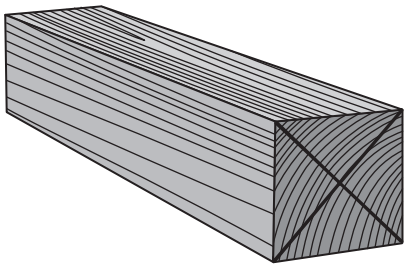
(ii) State one reason why some manufactured boards, such as hardboard, would be **unsuitable** for use in the tool rack. **1**

Hardwood Information			
Hardwood	**Origin**	**Endangered**	**Sustainable**
A	Europe	no	yes
B	South America	no	yes
C	UK	yes	no

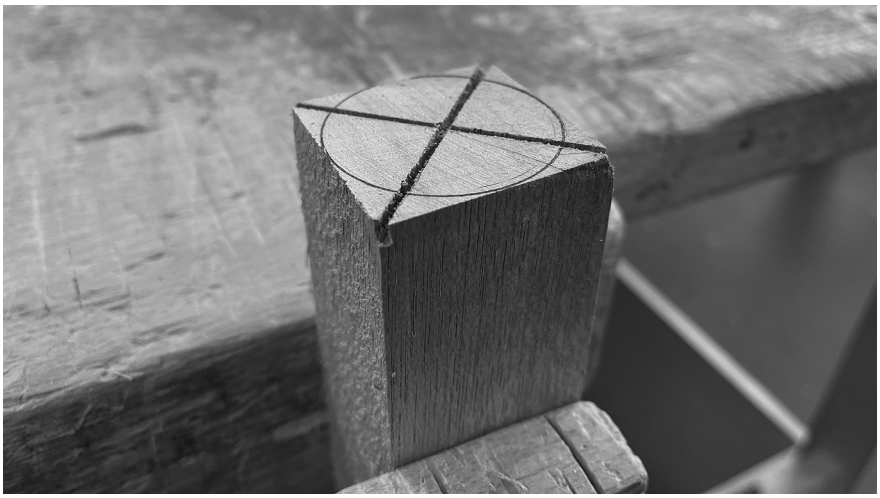
(iii) Explain, giving two reasons, why hardwood A from the table above is the most suitable option for the outdoor tool rack. **2**

5. (continued)

(b) The pegs for the tool rack are made from a piece of wood, called a blank, using a woodturning lathe. Before the pegs can be turned, the blank has to be prepared.



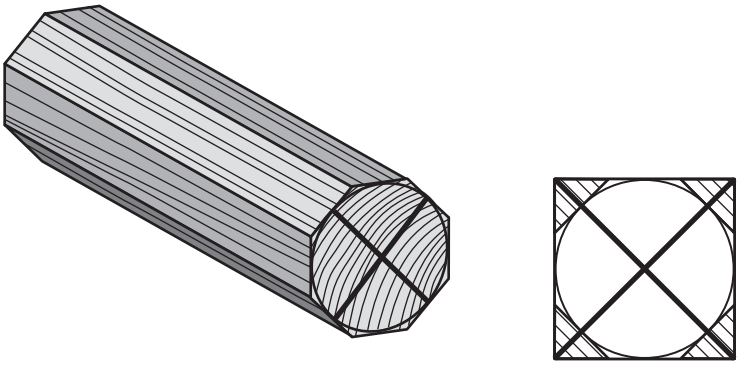
(i) State why diagonal lines have been marked on both ends of the blank. **1**



(ii) Explain why the diagonal lines are sawn on one end of the blank before attaching it to the woodturning lathe. **1**

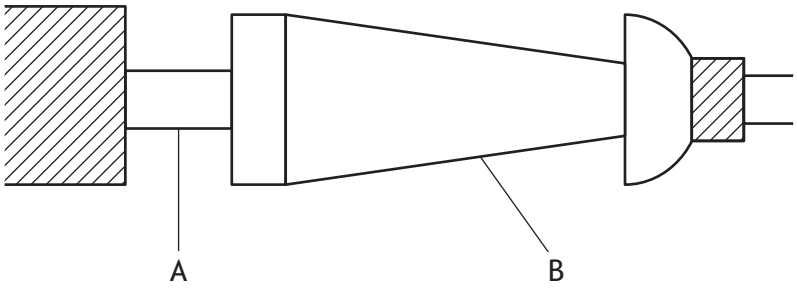
[Turn over

5. (b) (continued)



(iii) Explain why the four corners of the wooden blank must be planed before it can be turned. **1**

(c) The wooden pegs were created on a woodturning lathe using different tools. The picture below shows the shape of a peg created from the wooden blank.



Use the tools from the following list to respond to the questions below:

parting chisel **skew chisel** **gouge**

You must use each tool only once.

(i) State the name of the appropriate tool that was used to turn the blank into a cylindrical shape. **1**

(ii) State the name of the appropriate tool that was used to turn feature A. **1**

(iii) State the name of the appropriate tool that was used to turn feature B. **1**

5. (continued)

(d) (i) Describe two safety checks that must be made to the **tool rest** before switching on the woodturning lathe. **2**

Check 1

Check 2

(ii) State the name of an appropriate finish that can be applied to the pegs while the woodturning lathe is switched on. **1**

(iii) Explain why turning all five pegs from one blank rather than five individual blanks is good sustainable practice. **1**

[END OF QUESTION PAPER]

MARKS | DO NOT WRITE IN THIS MARGIN

ADDITIONAL SPACE FOR ANSWERS

MARKS | DO NOT WRITE IN THIS MARGIN

ADDITIONAL SPACE FOR ANSWERS

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