

FOR OFFICIAL USE

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Total

0600/402

NATIONAL
QUALIFICATIONS
2008

WEDNESDAY, 14 MAY
10.20 AM–11.20 AM

CRAFT AND DESIGN
STANDARD GRADE
General 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

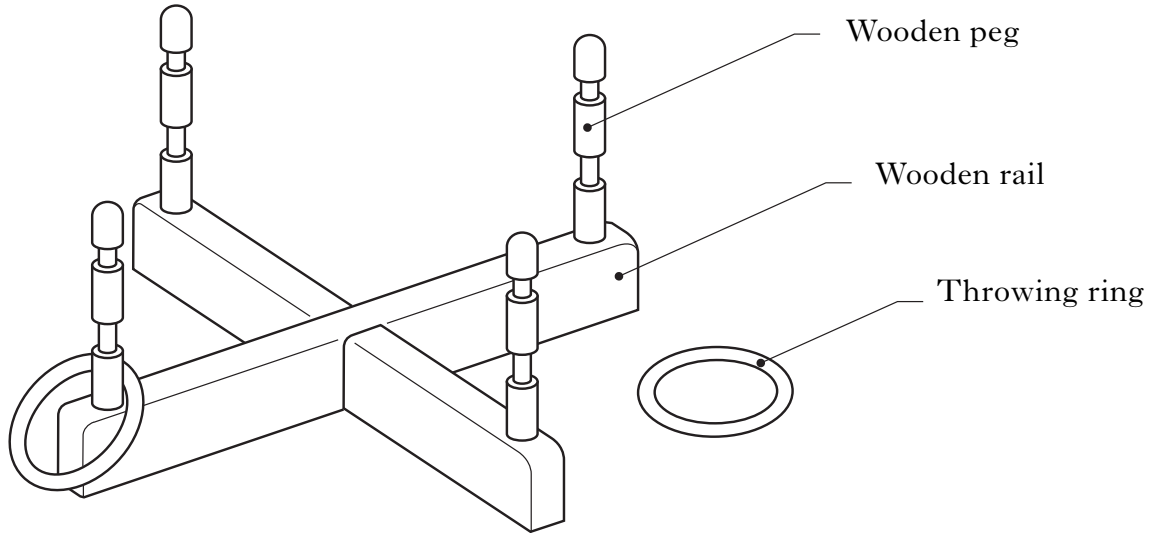
Number of seat

- 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.



ATTEMPT ALL QUESTIONS

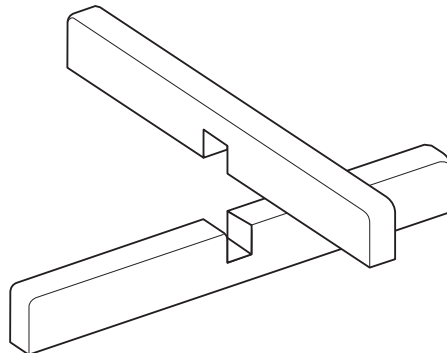
1. A child's game is shown below.



(a) The rails and pegs are to be made of a hardwood.
State the name of a suitable hardwood.

1
0

(b) The joint shown below was used in the manufacture of the game.

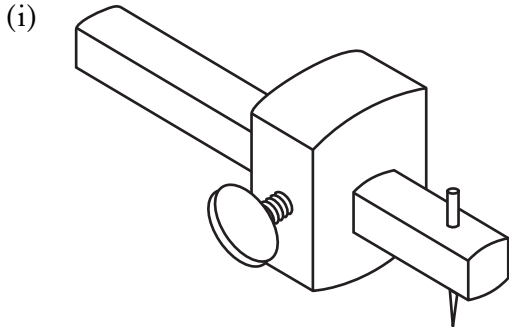


State the name of this joint.

1
0

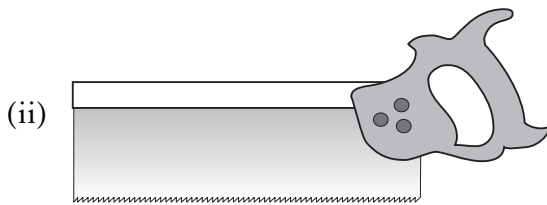
1. (continued)

- (c) The following tools were used in the manufacture of the joint.
State the name of each tool.



Tool name

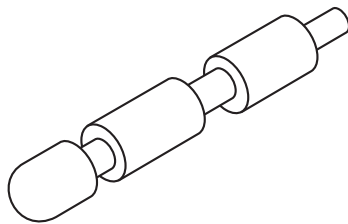
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Tool name

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- (d) A wooden peg is shown below.



State the name of the machine used to manufacture the peg.

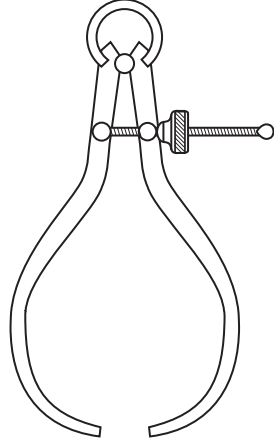
1
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[Turn over

1. (continued)

(e) The tools shown below were used when manufacturing the peg.
State the names of these tools.

(i)



Tool name

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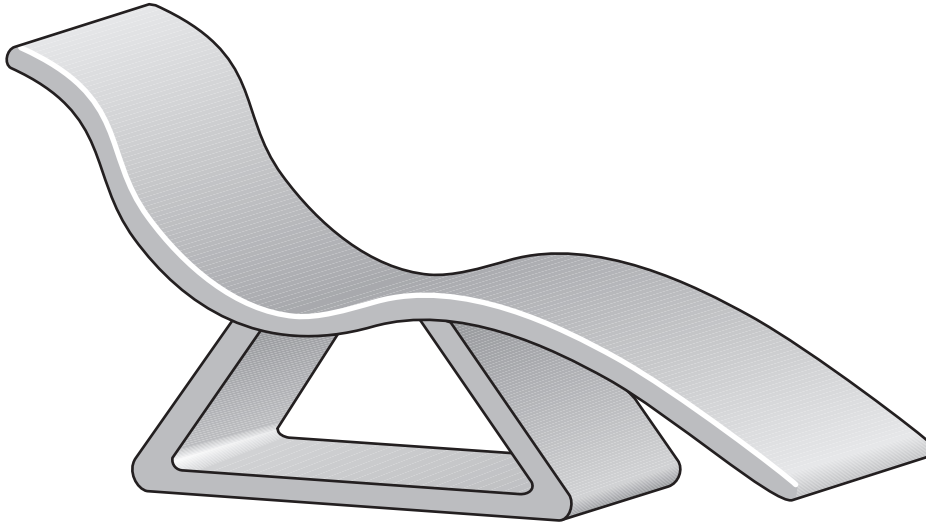
(ii)



Tool name

1
0

2. A design for a chair is shown below.



During the design process the following materials were researched.

Pine Plywood Mild steel Aluminium Acrylic Oak Copper

Using the materials list complete the table below.

Material	Classification	Properties
<input style="width: 100%; height: 100%;" type="text"/>	Ferrous metal	Strong, magnetic, rusts
<input style="width: 100%; height: 100%;" type="text"/>	Manufactured board	Strong, multi-layered board available in large sheets
<input style="width: 100%; height: 100%;" type="text"/>	Non ferrous metal	Lightweight, silver coloured
<input style="width: 100%; height: 100%;" type="text"/>	Thermoplastic	Available in many colours, can be heated and shaped
<input style="width: 100%; height: 100%;" type="text"/>	Softwood	Yellowish red coloured wood

1
0

1
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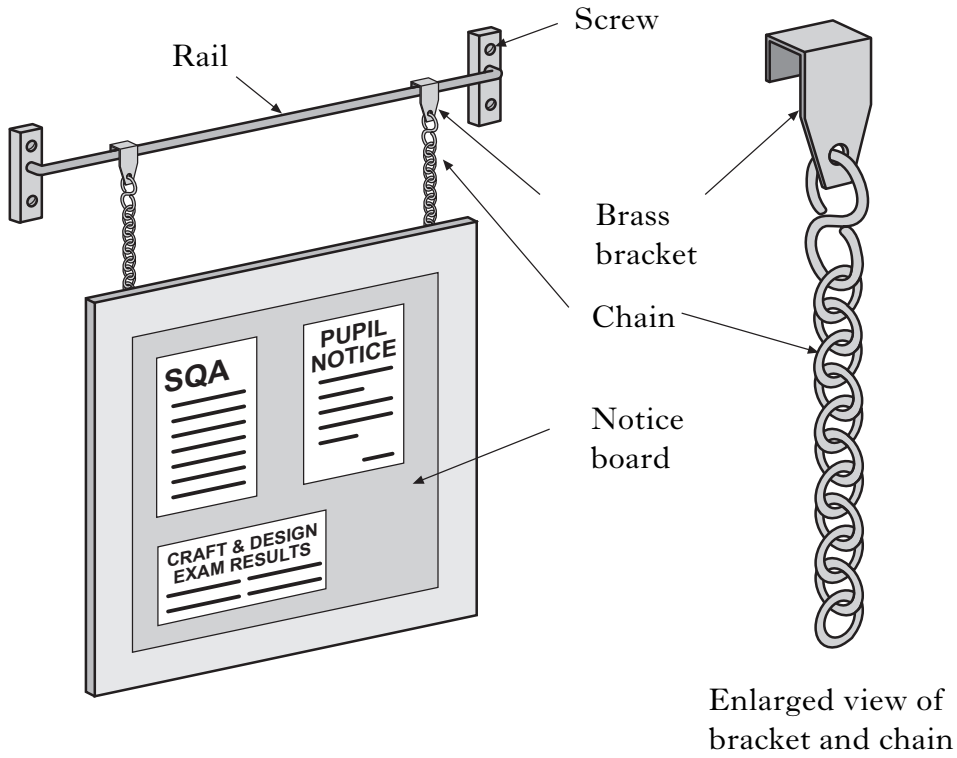
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[Turn over

3. A school notice board is shown below.



(a) A statement which appeared in the specification for the notice board is given below.

- It must accommodate a range of notice board sizes.

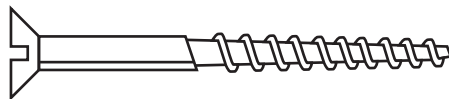
List **two** other statements that could appear in the design specification.

(i)

(ii)

1
0
1
0

(b) The rail is fixed to the wall using the wood screw shown below.

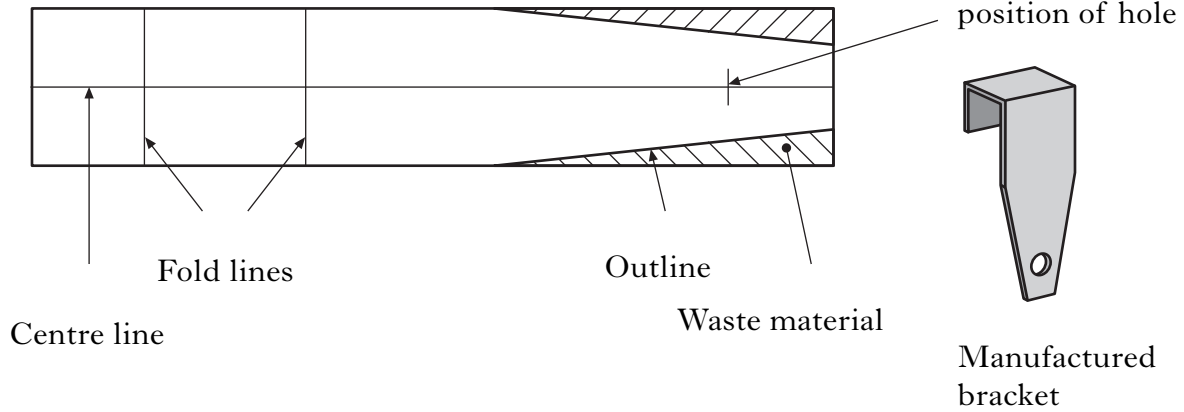


State the name of this type of wood screw.

1
0

3. (continued)

During the manufacture of the bracket, the brass was marked out as shown below.



(c) A template was used to mark the outline of the bracket. State **two** advantages of using a template.

Advantage 1

1
0

Advantage 2

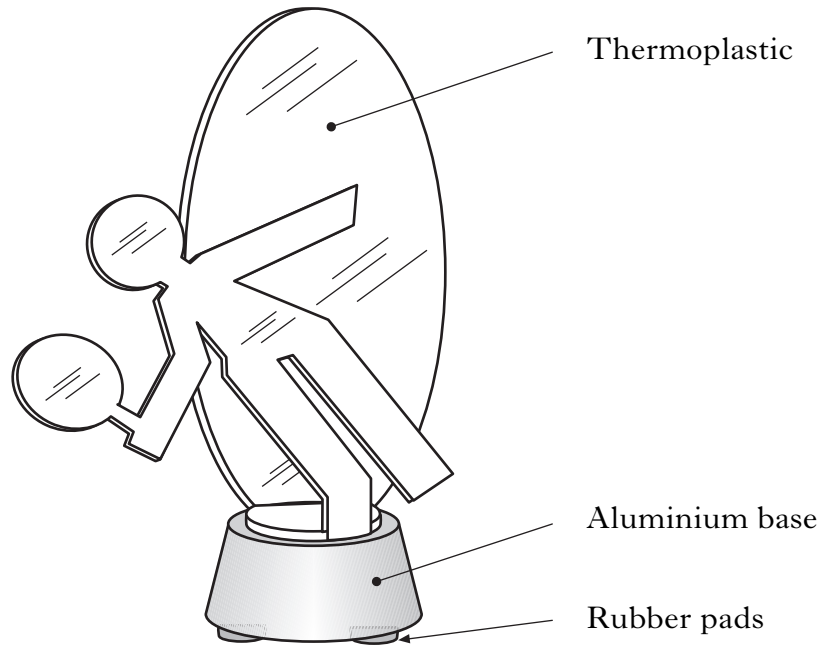
1
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(d) Complete the sequence of operations for the manufacture of the bracket.

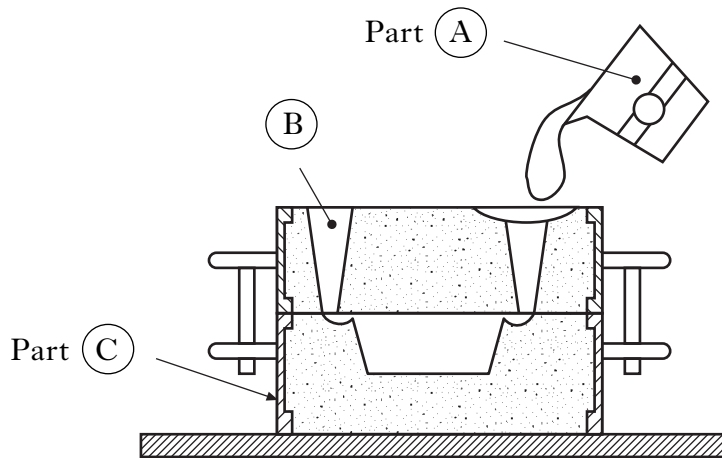
Stage	Operation	Tool needed
1	Mark outline of the bracket	Scriber
2	<div style="border: 1px solid red; height: 25px;"></div>	Centre punch
3	Mark centre line parallel to edge	<div style="border: 1px solid red; height: 25px;"></div>
4	<div style="border: 1px solid red; height: 25px;"></div>	Hacksaw
5	Smooth edges of bracket	<div style="border: 1px solid red; height: 25px;"></div>
6	<div style="border: 1px solid red; height: 25px;"></div>	Bending bars
7	Brush	Apply a finish to the metal

1
0
1
0
1
0
1
0

4. A trophy is shown below.



(a) The process of sand casting was used to manufacture the aluminium base.



Some terms relating to the casting process are given below.

Runner Crucible Riser Drag Moulding Sand

Using these terms, state the name of:

- (i) Part (A)
- (ii) The opening at (B)
- (iii) Part (C)

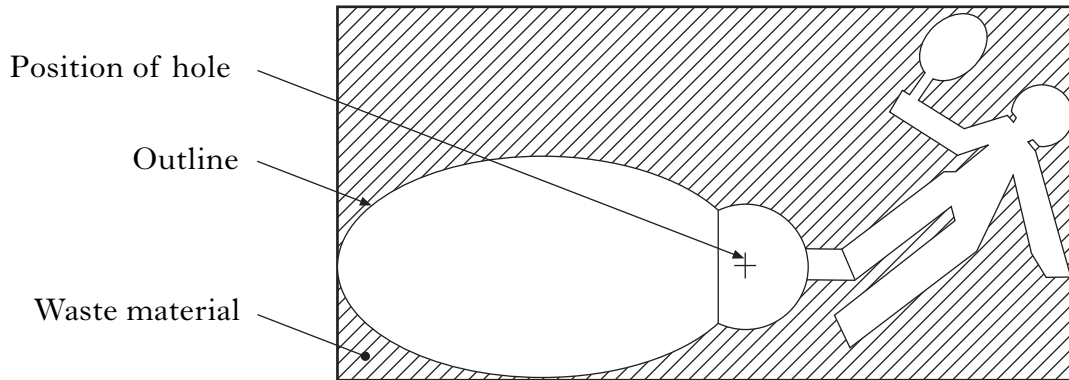
1
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1
0
1
0

4. (continued)

- (b) State a reason why the rubber pads were fitted to the aluminium base.

1
0

The thermoplastic shape is shown below.



- (c) State the name of a hand tool that could be used to cut out the curved shapes in the thermoplastic.

1
0

- (d) A pedestal drill was used during manufacture.

- (i) State a safety check that should be made to the machine before switching it on.

1
0

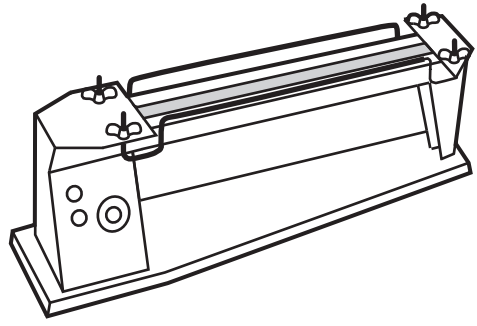
- (ii) State a method that could be used to prevent the plastic from cracking when drilling.

1
0

[Turn over

4. (continued)

(e) The machine shown below was used during manufacture of the trophy.



(i) State the name of this machine.

1
0

(ii) Other than eye protection state a safety precaution that should be followed when using this machine.

1
0

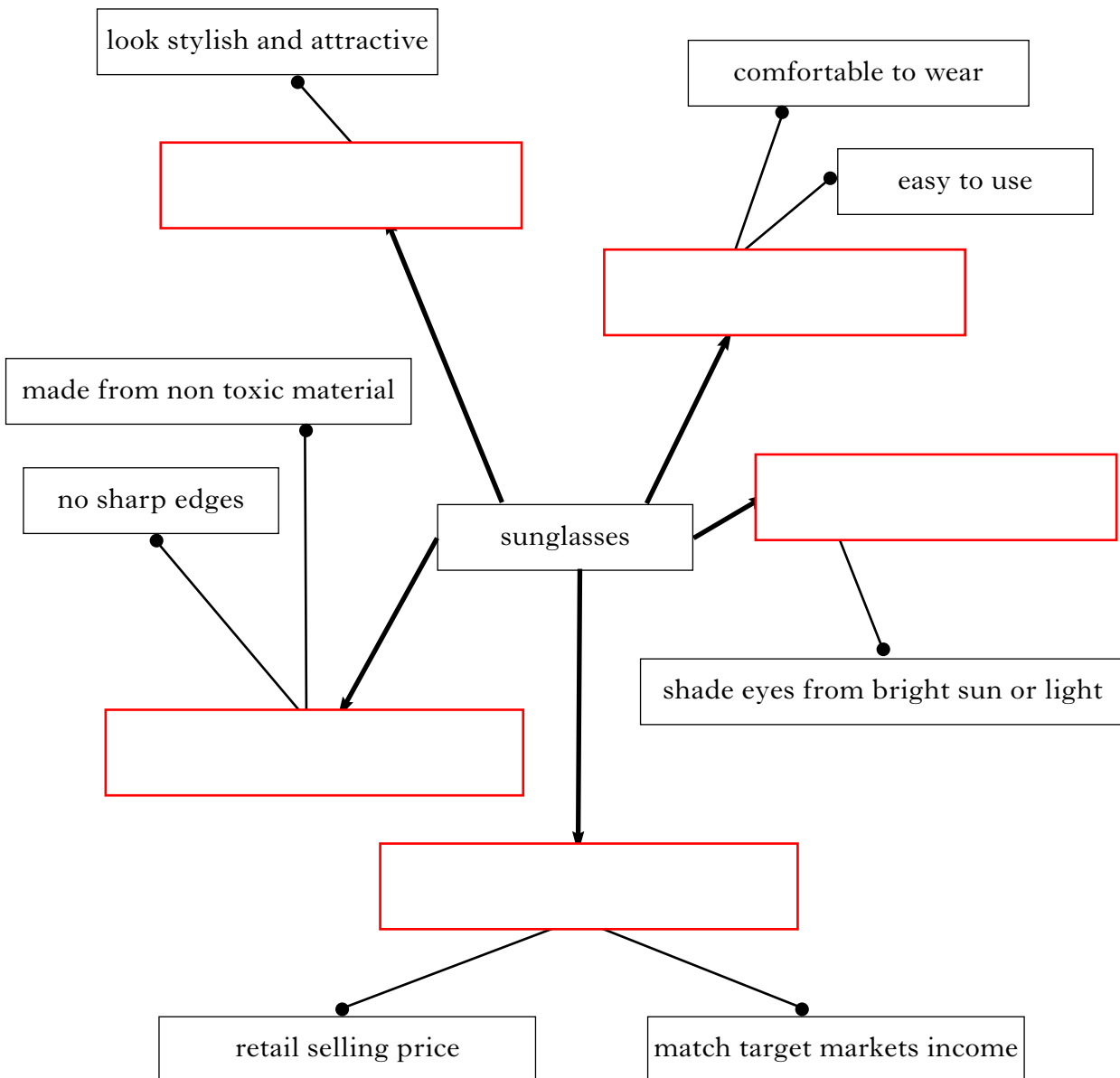
5. A designer has been asked to develop a new pair of sunglasses.



During the analysis the designer considered the following design factors.

Ergonomics Economics Safety Aesthetics Function

Using each design factor once, complete the diagram below.



1
0

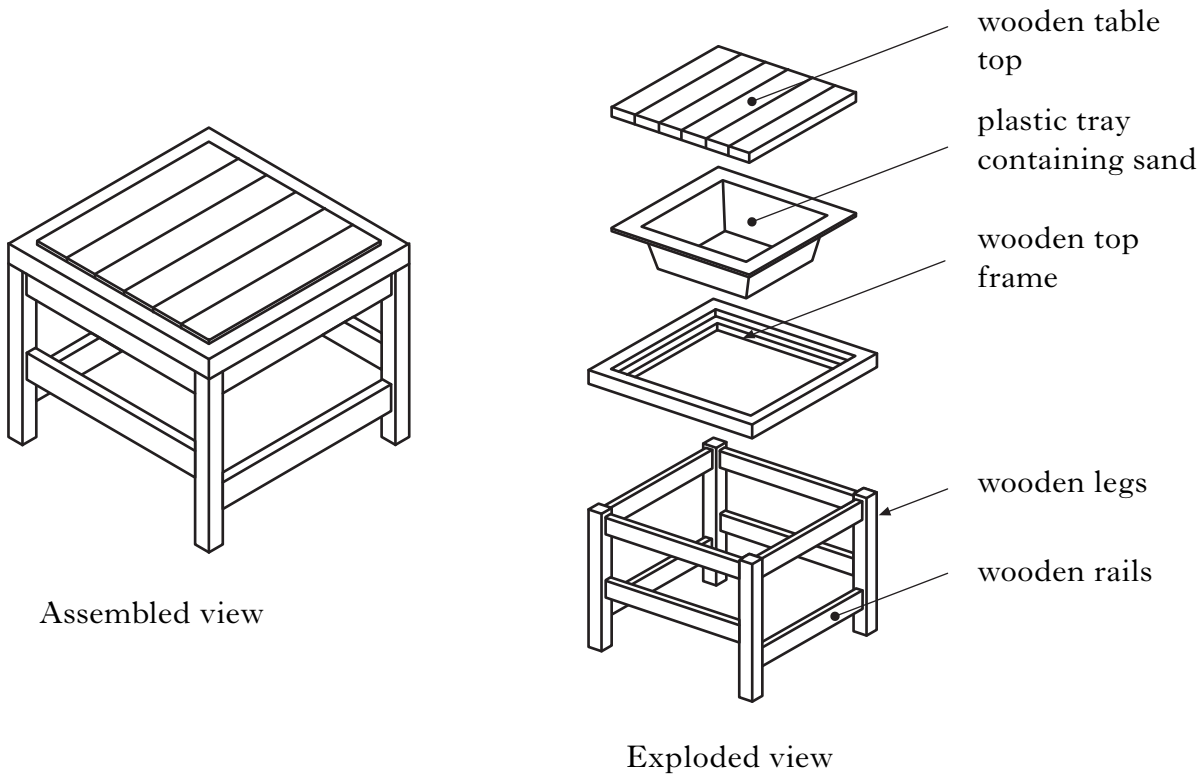
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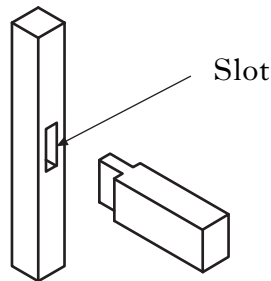
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1
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6. A covered sand pit table for a nursery is shown below.



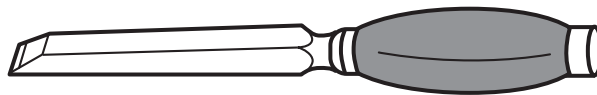
(a) The joint shown was used in the manufacture of the table.



(i) State the name of this joint.

1
0

The chisel shown below was used in the manufacture of the joint.



(ii) State the name of this type of chisel.

1
0

(iii) Describe how to ensure that the slot in the leg is cut to the correct depth.

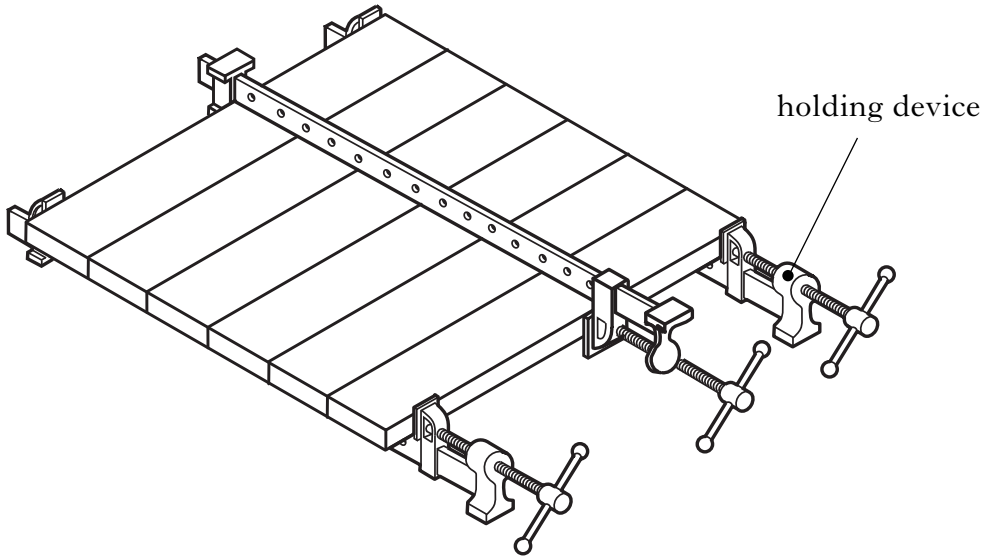
1
0

6. (continued)

- (b) State the name of a white coloured wood glue used in the assembly of the wooden table.

1
0

- (c) The table top is made by joining strips of pine together and holding them as shown below.



- (i) State the name of the holding device.

1
0

- (ii) State a reason for placing one of the holding devices on top.

1
0

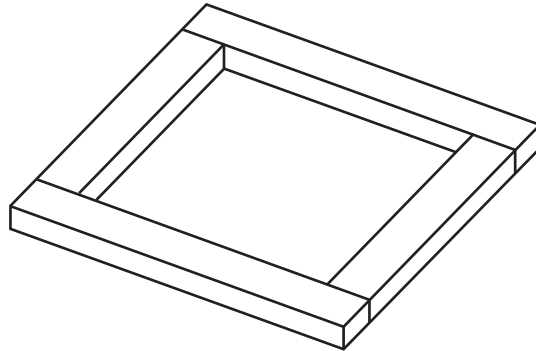
- (iii) The edge of the pine was damaged when the holding device was tightened. State how this damage could be avoided.

1
0

[Turn over

6. (continued)

(d) The top frame is shown below.



State **two** methods of checking if the top frame is “square”.

Method 1.

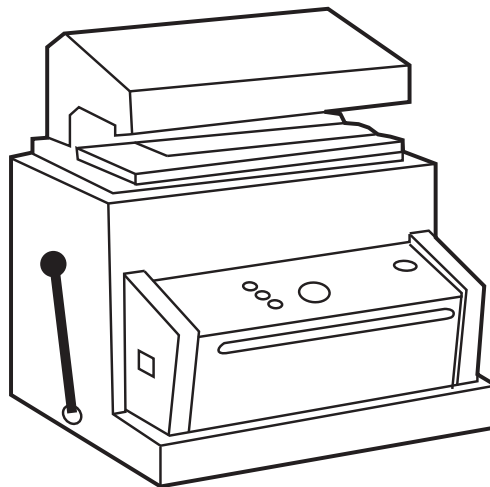
Method 2.

1
0
1
0

(e) State a suitable finish that could be applied to show the natural grain of the wood.

1
0

(f) The plastic tray was shaped using the machine shown below.

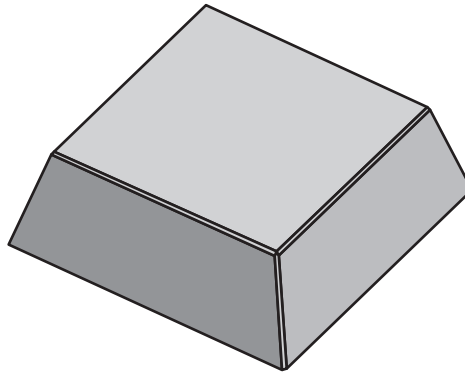


State the name of this machine.

1
0

6. (continued)

(g) The pattern shown below was used during the manufacture of the tray.



Heavy

Rounded edges

Tapered edges

Wooden

From the list above select the feature of the pattern that would:

(i) prevent tears occurring in the thermoplastic

1
0

(ii) help with the removal of the tray from the pattern after shaping.

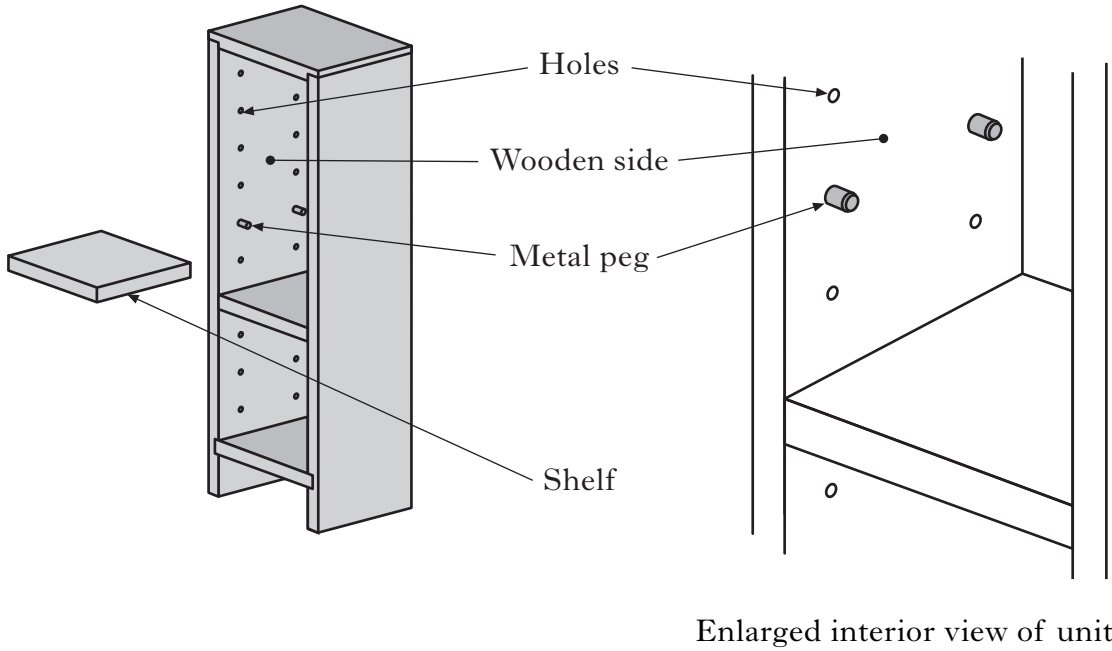
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(h) At the end of the manufacture the designer tested the table against the specification. State the name of this stage in the design process.

1
0

[Turn over

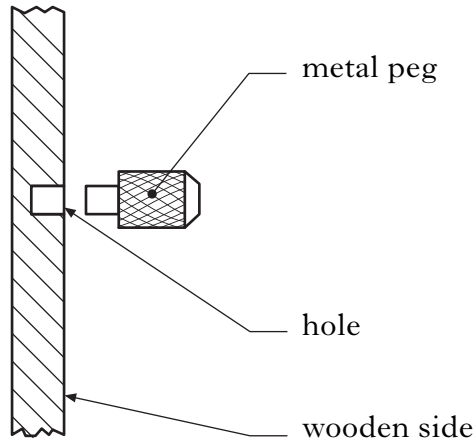
7. A shelf unit is shown below.



- (a) (i) Holes for the pegs were drilled in the sides.
State a reason why there are more holes than pegs.

1
0

- (ii) The sketch below shows a side of the shelf unit with a hole drilled part way through.

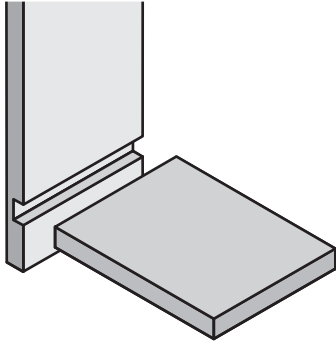


State the name of this type of hole.

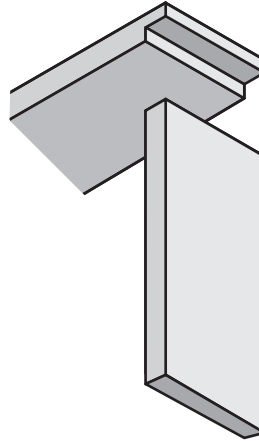
1
0

7. (continued)

(b) The joints shown below were used in the manufacture of the shelf unit.
State the name of these joints.



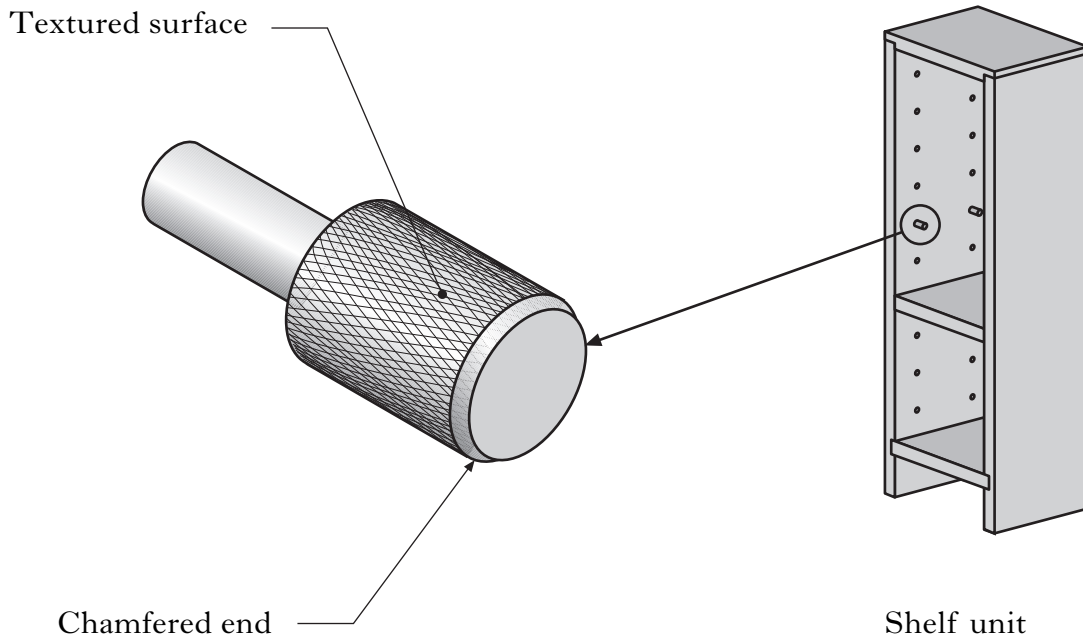
(i)



(ii)

2
1
0

One of the metal pegs is shown below.



Enlarged view of metal peg

[Turn over

7. (continued)

(c) State a reason for the chamfer on the end of the peg.

1
0

(d) State a functional reason for the textured surface on the peg.

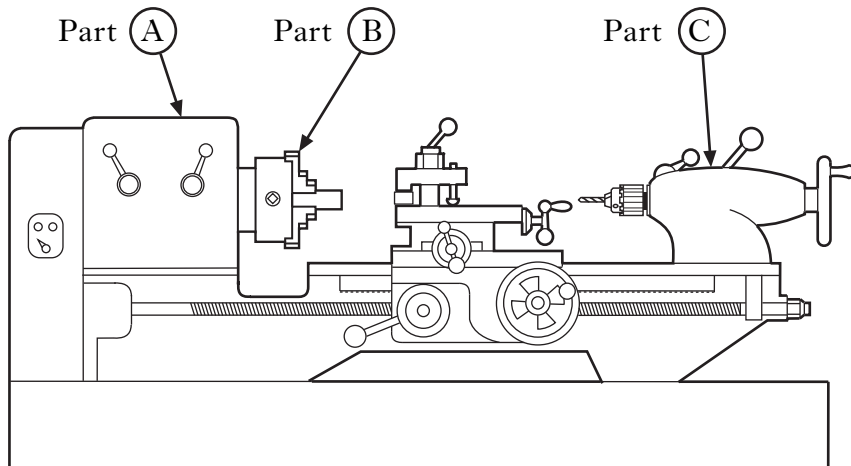
1
0

(e) (i) The machine shown below was used to manufacture the pegs.
State the name of the machine shown below.

1
0

(ii) Using the list below state the names of parts (A) (B) and (C).

Chuck Headstock Tailstock Saddle Toolpost



Part (A)

1
0

Part (B)

1
0

Part (C)

1
0

[END OF QUESTION PAPER]

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