FOR OFFICIAL USE

F

Q1		Q5	
Q2		Q6	
Q3		Q7	
Q4			

Total

0600/401

NATIONAL QUALIFICATIONS 2010

MONDAY, 17 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.

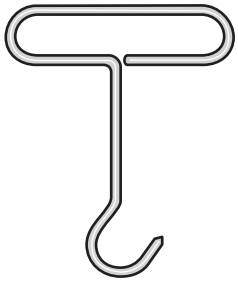
5 All dimensions are given in millimetres.

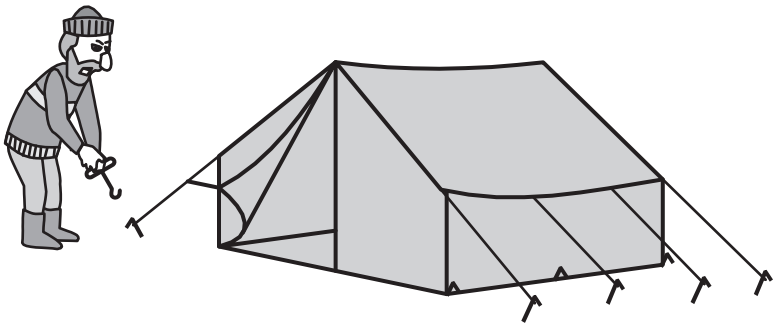
6 Before leaving the examination room you must give this book to the invigilator. If you do not, you may lose all the marks for this paper.

DO NOT WRITE IN THIS MARGIN

ATTEMPT ALL QUESTIONS

1. A tent peg remover is shown below.





Enlarged view of tent peg remover

(*a*) The tent peg remover is made from mild steel.

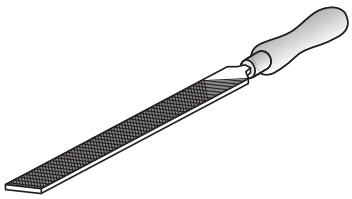
Tick (✓) the property that makes this a suitable material.

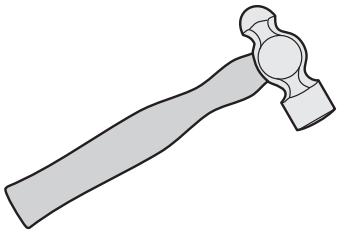
- ☐ It is non ferrous
- ☐ It is a golden colour
- ☐ It returns to its original shape when heated
- ☐ Is is strong

1 0

(*b*) The tools shown below were used during the manufacture of the tent peg remover. State the name of the tools below using the word bank provided.

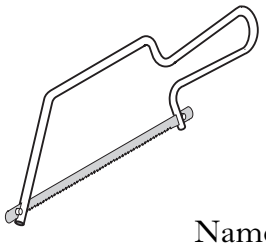
Junior Hacksaw	**Dividers**	**Ball Pein Hammer**	**Crucibile**
Hide Mallet	**Flat File**	**Mortise Chisel**	**Anvil**





Name _____ Name _____

1 0 1 0



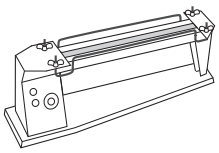
Name _____

1 0

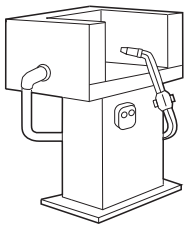
1. (continued)

(*c*) A forge was used to heat the mild steel before bending.

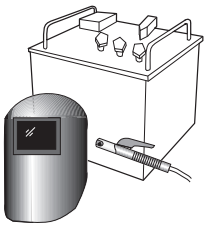
Tick (✓) the sketch of a forge.



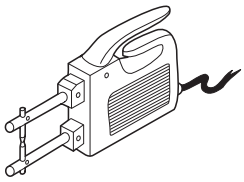
☐



☐



☐

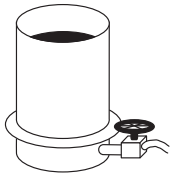


☐

10

(*d*) (i) During the manufacture the handle of the tent peg remover was plastic dip coated using the equipment shown below.

Tick (✓) the name of this equipment.



☐ Oven

☐ Strip heater

☐ Fluidiser

☐ Soldering bolt

10

(ii) Five stages in the dip coating process are shown in the **wrong** order.

dip metal into plastic powder **leave to cool** **clean metal**
shake excess plastic powder from metal **heat metal**

State which stage should be completed first.

_____

10

State which stage should be completed last.

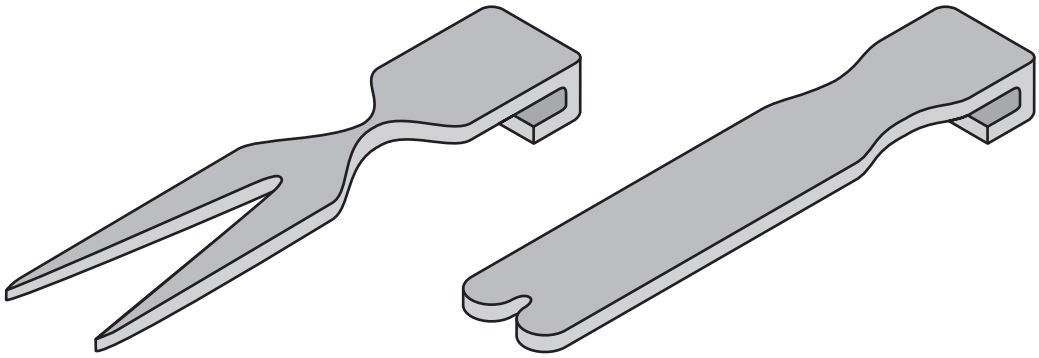
_____

10

[Turn over

DO NOT WRITE IN THIS MARGIN

2. An initial idea and final design for plastic salad servers are shown below.



Initial idea Final design

(*a*) State **two** design faults in the initial idea.

Fault 1 _____ **1 0**

Fault 2 _____ **1 0**

(*b*) (i) The final design was made from plastic.

Tick (✓) **two** reasons from the list why plastic was used.

It is easy to clean	☐	It is available in large sheets	☐
It conducts electricity	☐	It bends easily when heated	☐
It has a protective cover	☐	It cracks easily when drilled	☐

1 0 1 0

(ii) The salad servers were made from plastic.

Tick (✓) the name of a plastic.

- ☐ Mahogany
- ☐ Copper
- ☐ Acrylic
- ☐ MDF

1 0

2. (continued)

(*c*) (i) A template was used to mark out the shape of the salad servers.

State **one** benefit of using a template.

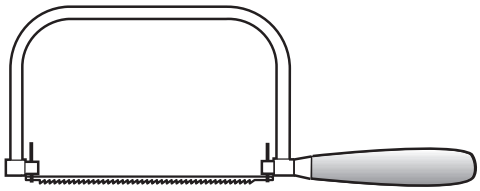
1 0

_____

(ii) The plastic was cut using the tool shown below.

Tick (✓) the name of this tool.

- ☐ Coping saw
- ☐ Tenon saw
- ☐ Panel saw
- ☐ Junior hacksaw



1 0

(*d*) The stages for finishing the edges of the plastic are given below **in the wrong order**.

- Rub with wet and dry paper
- Cross file
- Apply abrasive polish
- Draw file

State which stage would be completed first.

1 0

_____

State which stage would be completed last.

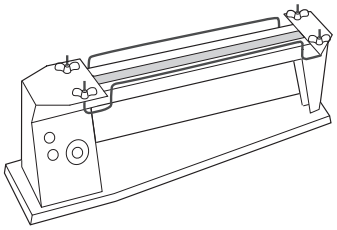
1 0

_____

(*e*) The machine shown below was used before bending the plastic.

Tick (✓) the name of this machine.

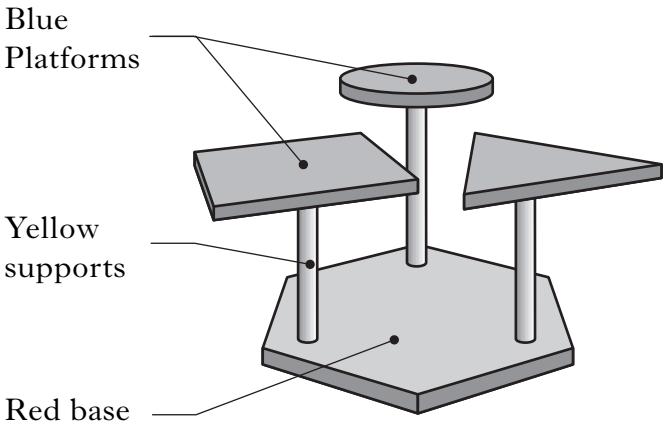
- ☐ Anvil
- ☐ Oven
- ☐ Forge
- ☐ Strip heater



1 0

[Turn over

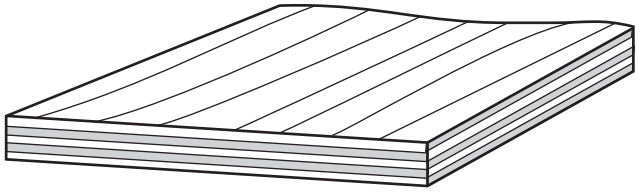
3. A cake stand for use at a children's party is shown below.



(*a*) The platforms are made from the manufactured board shown below.

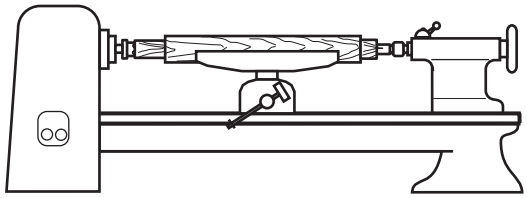
Tick (✓) the name of this manufactured board.

- ☐ Chipboard
- ☐ Blockboard
- ☐ Plywood
- ☐ MDF



1 0

(*b*) The machine shown below was used in the manufacture of the wooden supports.



(i) State the name of this machine.

1 0

_____

3. (*b*) (continued)

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

- ☐ Forming
- ☐ Casting
- ☐ Turning
- ☐ Shaping

1 0

(iii) State two safety rules that should be followed when using this machine.

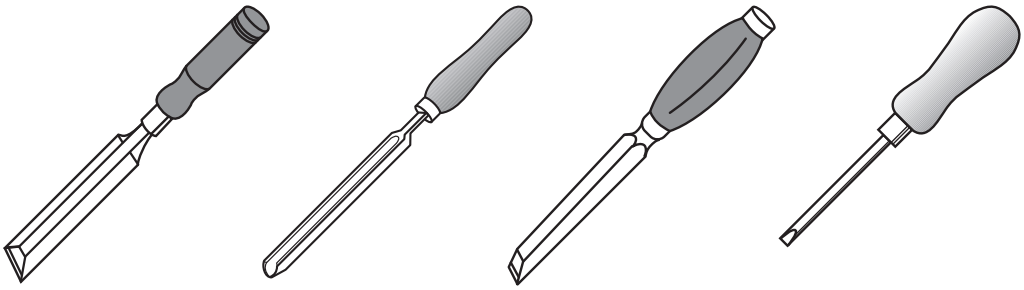
1 _____

2 _____

1 0 1 0

(iv) The wooden supports were shaped using a gouge.

Tick (✓) the sketch of a gouge.



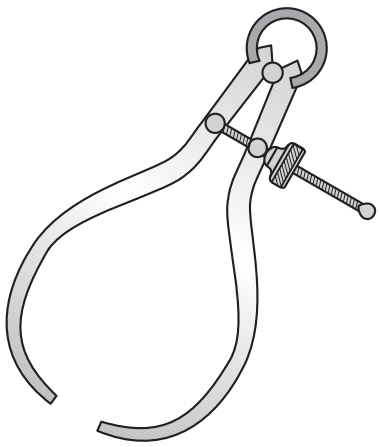
☐ ☐ ☐ ☐

1 0

(v) The tool shown below was used in the manufacture of the wooden supports.

Tick (✓) the statement which describes what this tool is used for.

- ☐ Clamping
- ☐ Checking sizes
- ☐ Cutting
- ☐ Smoothing

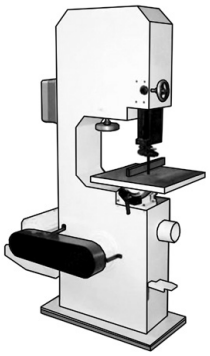


1 0

[Turn over

3. (continued)

(*c*) (i) The machine tool below was used during the manufacture of the cake stand.



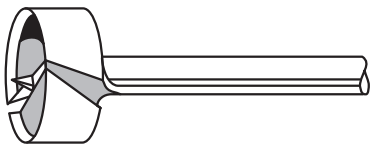
Tick (✓) the correct name of this machine.

- ☐ Bandsaw
- ☐ Panel saw
- ☐ Jigsaw
- ☐ Tenon saw

10

(ii) The bit shown below was used to drill holes in the base and the platforms.

Tick (✓) the correct name of this bit.



- ☐ Forstner
- ☐ Auger
- ☐ Flat
- ☐ Rose

10

(*d*) A list of finishes is given below.

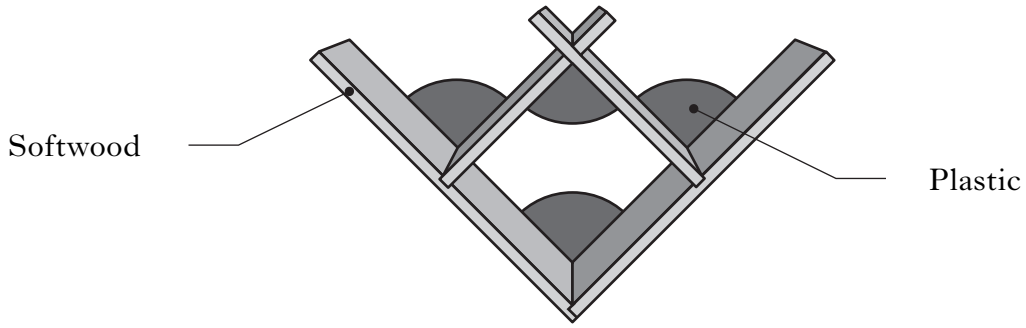
Lacquer **Acrylic paint** **Vegetable oil** **Clear varnish**

Select a suitable coloured finish for the cake stand from the list.

Finish _____

10

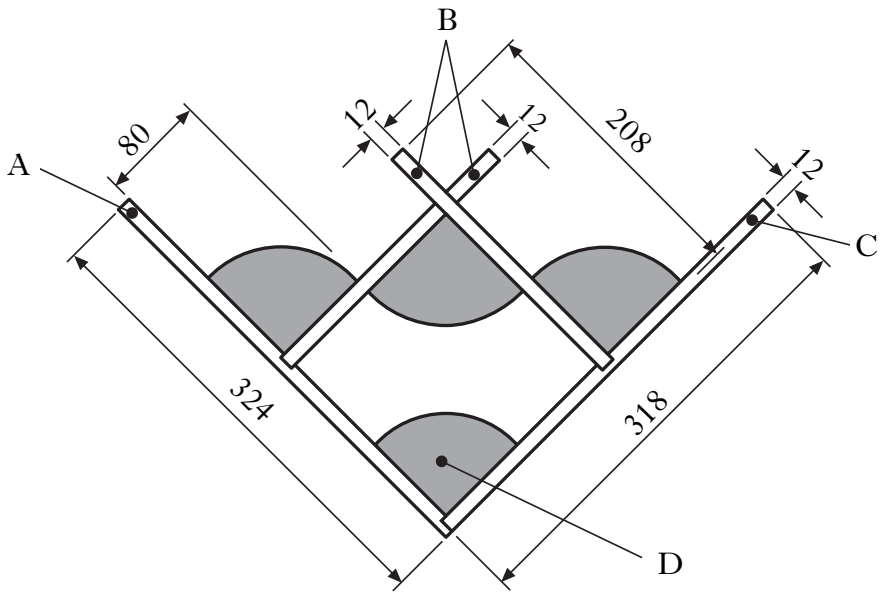
4. A wall mounted storage rack for computer games is shown below.



All softwood 12 mm thick

(*a*) A working drawing and incomplete cutting list for the storage rack is shown below.

Complete the cutting list.



Part	Quantity	Length	Breadth	Thickness	Material
A	1	324	140	12	
B	2	208	140		Softwood
C	1		140	12	Softwood
D	4	80	80	4	Plastic

1 0 1 0 1 0

[Turn over

4. (continued)

(*b*) (i) A softwood was used in the manufacture of the rack.

Tick (✓) the softwood.

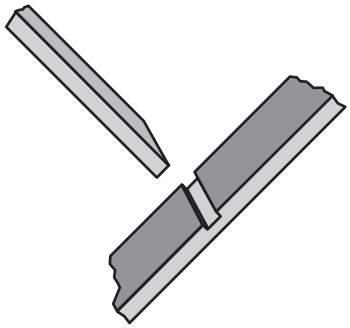
- ☐ Pine
- ☐ Oak
- ☐ MDF
- ☐ Plywood

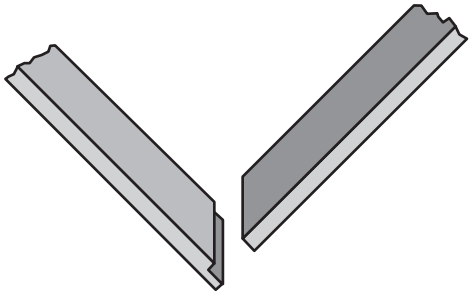
1 0

(ii) The joints shown were used in the manufacture of the storage rack.

Select the name of each joint from the list below.

Dowel **Mortise and tenon** **Housing** **Cross halving** **Lap**



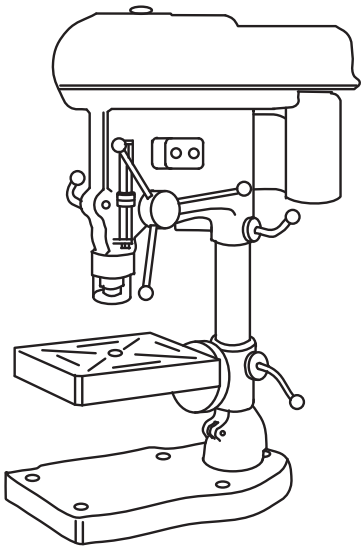


Joint _____ Joint _____

2 1 0

4. (continued)

(*c*) (i) The machine below was used during the manufacture.



State the name of this machine.

1 0

_____

(ii) From the list below, tick (✓) **three** safety checks that should be carried out on the machine before switching it on.

☐ Material is secured	☐ Tool rest is secure
☐ Tailstock removed	☐ Material turns freely
☐ Guard is down	☐ Chuck key is removed

3 2 1 0

(iii) Wood was placed under the plastic before drilling.

State a reason for this.

1 0

_____

(iv) The covering was kept on the plastic during manufacture.

State a reason for this.

1 0

_____

[Turn over

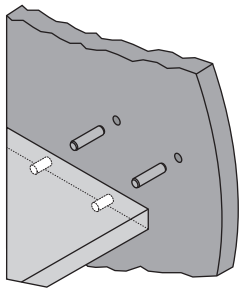
5. A bathroom vanity unit is shown below.

(*a*) The items to be stored in the vanity unit were measured.
Tick (✓) the stage in the design process where this would take place.

- ☐ Evaluation
- ☐ Presentation drawing
- ☐ Research
- ☐ Cutting list

1 0

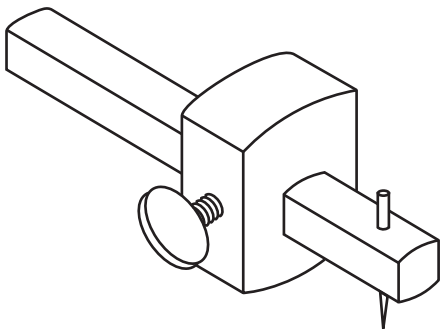
(*b*) (i) The joint shown below was used in the manufacture of the vanity unit.
Tick (✓) the name of this joint.



- ☐ Rub joint
- ☐ Housing joint
- ☐ Dowel joint
- ☐ Knock down fitting

1 0

(ii) The tool below was used to mark out the joint.
Tick (✓) the name of this tool.



- ☐ Steel rule
- ☐ Dividers
- ☐ Scriber
- ☐ Marking gauge

1 0

5. (continued)

(*c*) (i) A white coloured glue was used during the manufacture of the unit.

From the list select the name of this glue.

PVC **Epoxy** **Impact** **PVA**

Glue _____ **10**

(ii) A waterproof glue was used. State a reason for this.

_____

_____ **10**

(iii) State a method of removing excess glue from the joints during the manufacture of the vanity unit.

Method

_____ **10**

(iv) The tool shown was used to check for squareness.

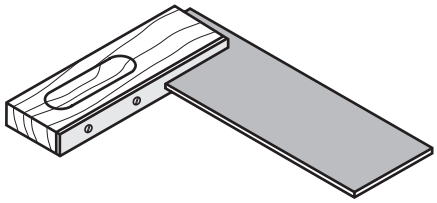
Tick (✓) the correct name.

☐ Engineer's square

☐ Mitre square

☐ Set square

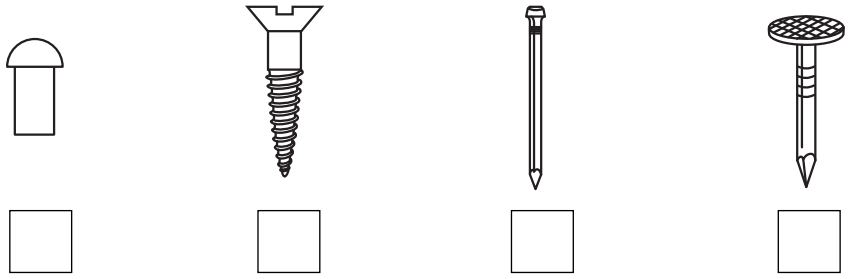
☐ Try square



10

(*d*) (i) A countersunk screw was used to attach the hinges on the door.

Tick (✓) the sketch of the countersunk screw.

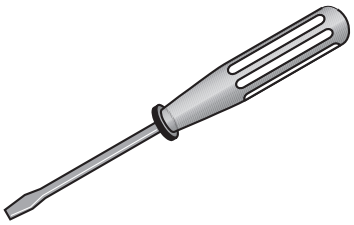


10

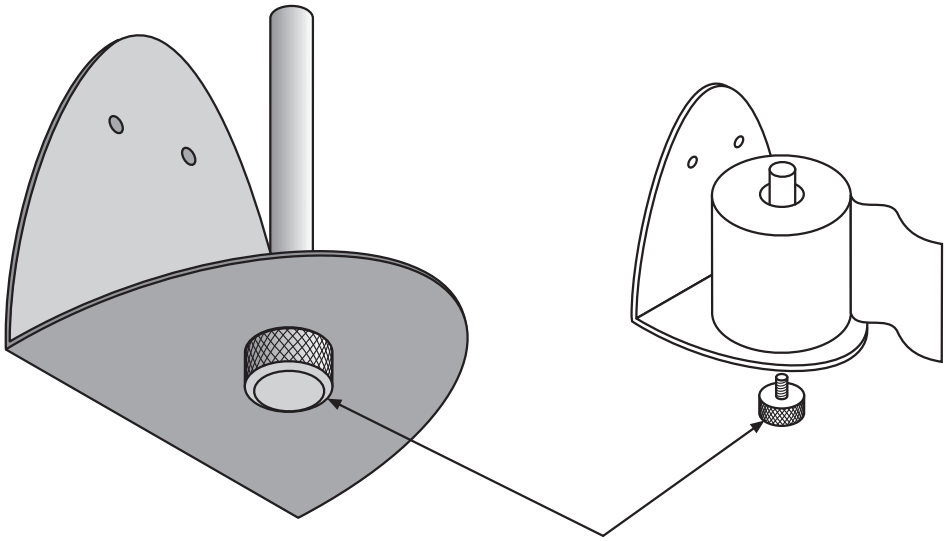
(ii) The tool shown below was used when attaching the hinges.

State the name of this tool.

_____ **10**



6. A wall mounted toilet roll holder made from sheet metal is shown below.



Part X

(*a*) The tools shown below were used during the manufacture.

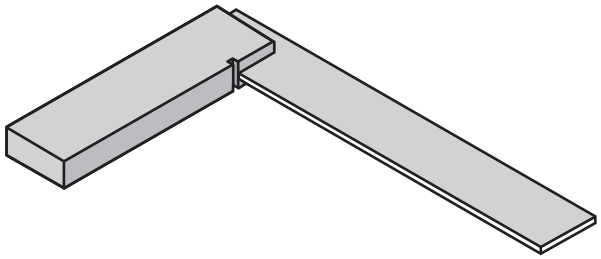
Tick (✓) the names of these tools.

(i) ☐ Engineer's square

☐ Mitre square

☐ Set square

☐ Try square



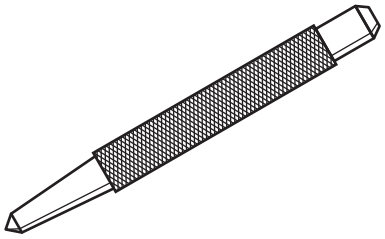
1 0

(ii) ☐ Engineer's square

☐ Marking gauge

☐ Centre punch

☐ Nail punch



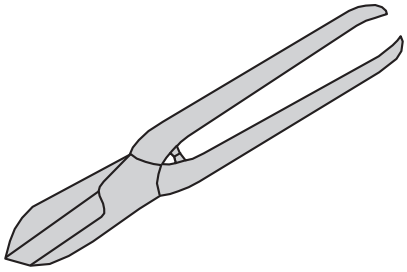
1 0

(iii) ☐ Coping saw

☐ Tin snips

☐ Junior hacksaw

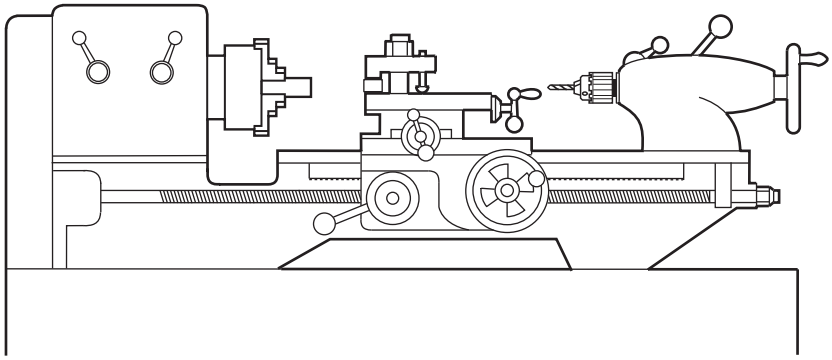
☐ Panel saw



1 0

6. (continued)

(*b*) The machine below was used in the manufacture of the toilet roll holder.

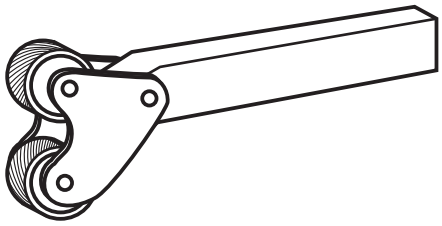


(i) State the name of this machine.

_____ **1 0**

(ii) The tool shown below was used to make the pattern on part X.
Tick (✓) the name of this tool.

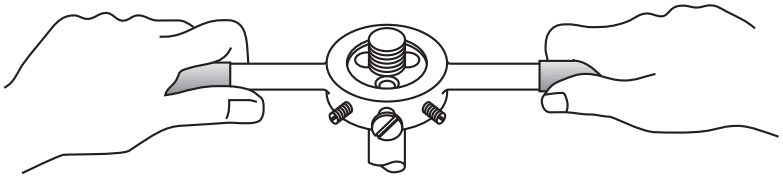
- ☐ Facing
- ☐ Knurling
- ☐ Parting
- ☐ Roughing



1 0

(*c*) Tick (✓) the name of the process being carried out below.

- ☐ Drilling
- ☐ Threading
- ☐ Filing
- ☐ Turning

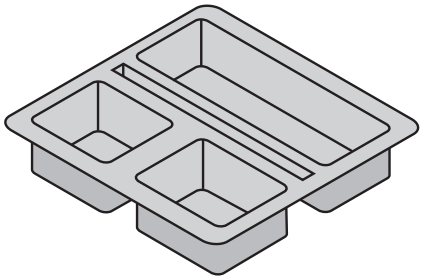


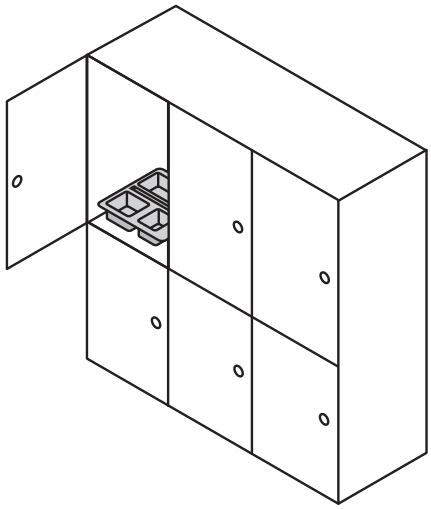
1 0

[Turn over for Question 7 on *Page sixteen*

DO NOT WRITE IN THIS MARGIN

7. A plastic tray and locker to store valuables in a leisure centre are shown below.





Some stages of a design process are listed below.

Specification **Working drawing** **Developed ideas** **Evaluation**

Sequence of operations **Design brief** **Research** **Initial ideas**

Using the above word bank, state the stage of the design process in which you would find:

(i) an investigation into possible materials;

Stage _____ **10**

(ii) a list of what the solution must do;

Stage _____ **10**

(iii) some rough sketches of possible solutions;

Stage _____ **10**

(iv) a list of how the project will be manufactured;

Stage _____ **10**

(v) a summary of how well the solution worked.

Stage _____ **10**

[*END OF QUESTION PAPER*]