



Victorian Certificate of Education 2013

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures

Words

Letter

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VCE VET FURNISHING (CABINET MAKING)

Written examination

Monday 11 November 2013

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	20	20	20
B	17	17	45
C	3	3	35
			Total 100

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners, rulers and one scientific calculator.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.

Materials supplied

- Question and answer book of 19 pages. There is a detachable insert for Section C in the centrefold.
- Answer sheet for multiple-choice questions.

Instructions

- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions**Instructions for Section A**

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

Question 1

Which one of the following will reduce the use of materials in a workshop?

- A. ensuring that standard sizes are used where possible
- B. ensuring that waste solvents are disposed of in the correct bin
- C. calculating the amount of HMR melamine board that is used each week
- D. checking that the extraction system is open only when the machines are in use

Question 2

The factory where John works uses spray contact to construct square-edge benchtops. Any excess contact is disposed of in the general waste bin.

What suggestion could John make to his employer to improve the environmental performance of the waste disposal?

- A. Use a canister-based contact system.
- B. Contract a solvent disposal and recovery collection service.
- C. Pour the contact onto cardboard and allow to dry before placing in the general waste bin.
- D. Save the waste and place in the general waste bin only when there are more than 20 litres.

Question 3

The piece of hardware shown above is most likely to be used to assemble

- A. benchtops.
- B. cabinet backs.
- C. drawer fronts.
- D. adjustable shelving.

Question 4

Which is the most appropriate joint to use for leg and rail construction?

- A. a mitre joint
- B. a dowel joint
- C. a biscuit joint
- D. a halving joint

Question 5

Which is the best tool for marking out dowel positions for leg and rail construction?

- A. a feeler gauge
- B. a profile gauge
- C. a cutting gauge
- D. a marking gauge

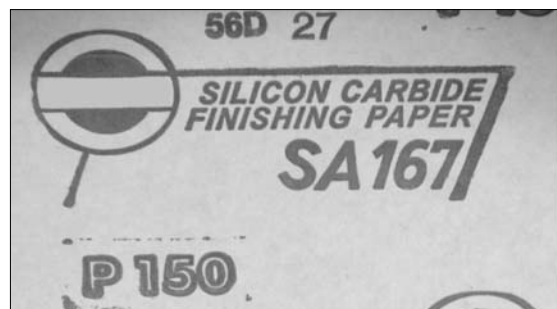
Question 6

Which one of the following is the correct abrasive paper for the final finishing of a solid timber cabinet prior to the polishing stage?

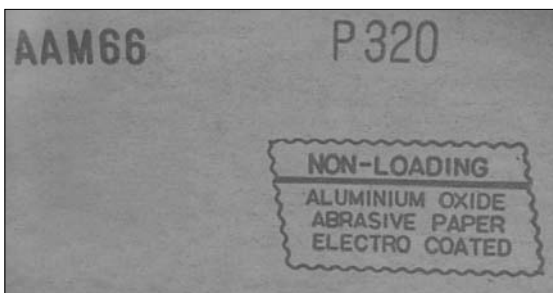
A.



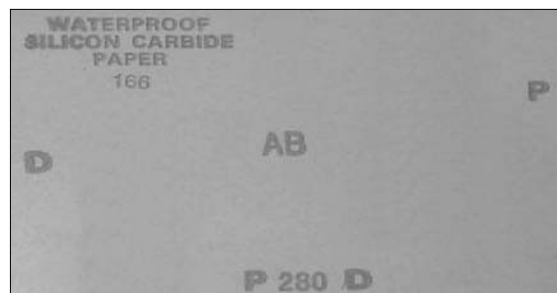
B.



C.



D.

**Question 7**

Which one of the following items can be operator sharpened?

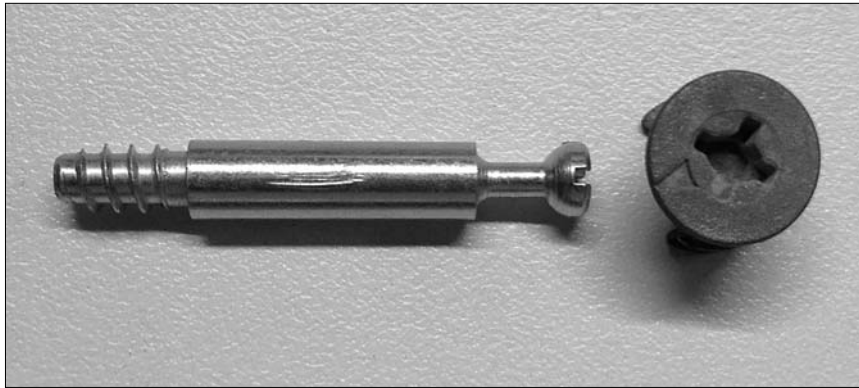
- A. a masonry drill bit
- B. TCT planer blades
- C. a hardpoint rip saw
- D. a brad point drill bit

Question 8

Janet is required to use a drill press that she has not used before.

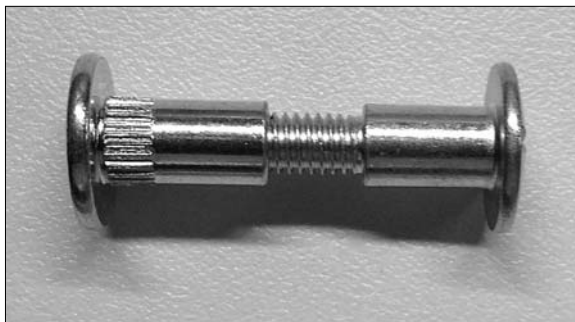
What should she do before starting work?

- A. Check all the measurements before drilling.
- B. Make sure that the last worker has completed their job.
- C. Check the SOP, check the machine and put on her PPE.
- D. Tell the supervisor that she is planning to use this piece of equipment.

Question 9

Which tool should be used to assemble a cabinet using the two-part connector shown above?

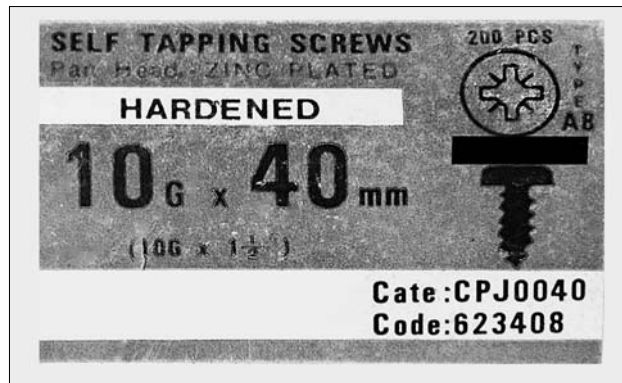
- A. a ratchet screwdriver
- B. a Phillips screwdriver
- C. a straight screwdriver
- D. a Pozidriv screwdriver

Question 10

You are on site installing cabinets.

For what task is the hardware shown above used?

- A. assembling the benchtops
- B. joining the cabinets side by side
- C. adjusting the height of the plinth
- D. fixing the overhead cabinets to the wall

Question 11

Which is the most appropriate screwdriver to use for the screws in the box shown above?

- A. a Phillips screwdriver
- B. a straight screwdriver
- C. a Pozidriv screwdriver
- D. a 10 mm Hex drive screwdriver

Question 12

Which tool should be used to best traverse a solid timber top before using the thicknesser?

- A. a try plane
- B. a jack plane
- C. a rebate plane
- D. a smoothing plane

Question 13

A supervisor has provided Andy with the mask shown above to use while sanding the legs of a table.

At the end of the day, Andy should

- A. dispose of the mask in a suitable bin.
- B. vacuum the mask until it is clean and store it in a clean area.
- C. seal the mask in a resealable plastic bag to reuse the next day.
- D. clean the mask with compressed air and seal it in a resealable plastic bag to reuse.

Question 14

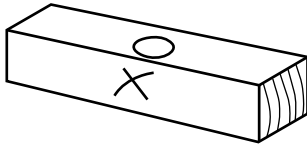
When making a piece of furniture, it is important to have a cutting list as it

- A. can indicate all materials and tools to be used.
- B. can be used to make the set-out match the project.
- C. is the only document that is required to complete the project.
- D. provides information on how to machine each part accurately.

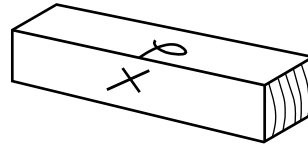
Question 15

Which symbols best represent a face mark and a face edge mark?

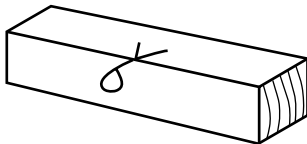
A.



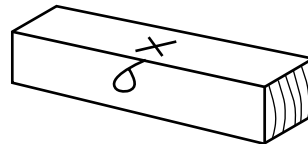
B.



C.



D.

**Question 16**

A customer asks Jane to make a set of eight chairs to match a teak table in their home.

Taking environmental sustainability into consideration, how would Jane source the teak?

- A. Jane would purchase teak timber at an auction house.
- B. Jane would use an Australian-grown timber and stain to match.
- C. Jane would use a light, plantation teak timber to make the chairs.
- D. Jane would use teak that is certified by the Forest Stewardship Council (FSC).

Question 17

What is the most effective way of removing excess ash veneer edging that is 0.8 mm thick from the edge of a Victorian ash veneer particle board?

- A. use a hand plane
- B. use a sharp chisel
- C. use a trimmer router
- D. use the edge of a file

Question 18

A belt sander has a worn-out sanding belt.

What action should be taken?

- A. Replace the belt only after it has broken.
- B. Clean the sanding belt with a belt and disc cleaner.
- C. Replace the belt with the directional arrows facing clockwise.
- D. Replace the belt with the directional arrows facing anticlockwise.

Question 19

What is the most suitable method for fixing a solid timber tabletop to the frame of a table?

- A. use 'figure 8' table clips
- B. use wooden table buttons
- C. put pocket screws through the rails
- D. put screws through the rails and corner blocks

Question 20

When feeding timber through the thicknesser, what is the maximum thickness that can be removed in one pass?

- A. 2 mm
- B. 5 mm
- C. 8 mm
- D. 10 mm

SECTION B – Short-answer questions**Instructions for Section B**

Answer **all** questions in the spaces provided.

Question 1 (3 marks)

Identify **one** way of improving environmental efficiency in a workshop for each of the following.

- purchasing of material

- electricity

- off cuts

Question 2 (2 marks)

Why is the arris removed from the bottom of the legs and bases of furniture?

Question 3 (2 marks)

Karen is cutting out a kitchen cutting plan on the table saw, but is called over to assist Colin with lifting cabinets.

Taking Occupational Health and Safety (OH&S) considerations into account, what would Karen do next?

Question 4 (2 marks)

Machine marks from a rail that was machined from hoop pine need to be removed.
Which grade of abrasive paper should be used and why?

Question 5 (2 marks)

What is the most appropriate tool for smoothing the top of a leg and rail frame? Justify your answer.

tool _____

justification _____

Question 6 (2 marks)

What do the broken line markings and symbols/hatchings on the doors of the scale drawing in Figure 1 represent?

- _____
- _____

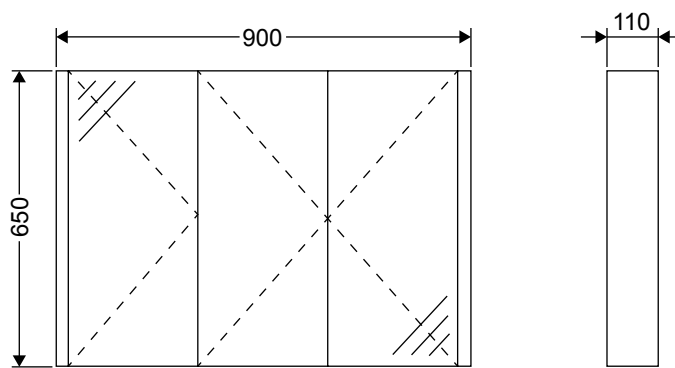


Figure 1

Question 7 (3 marks)

A bedside table is assembled, and the drawer and door components are fitted.
What are three steps that need to be taken before the bedside table is ready to be polished?

1. _____
2. _____
3. _____

Use Figure 2 to answer Question 8.

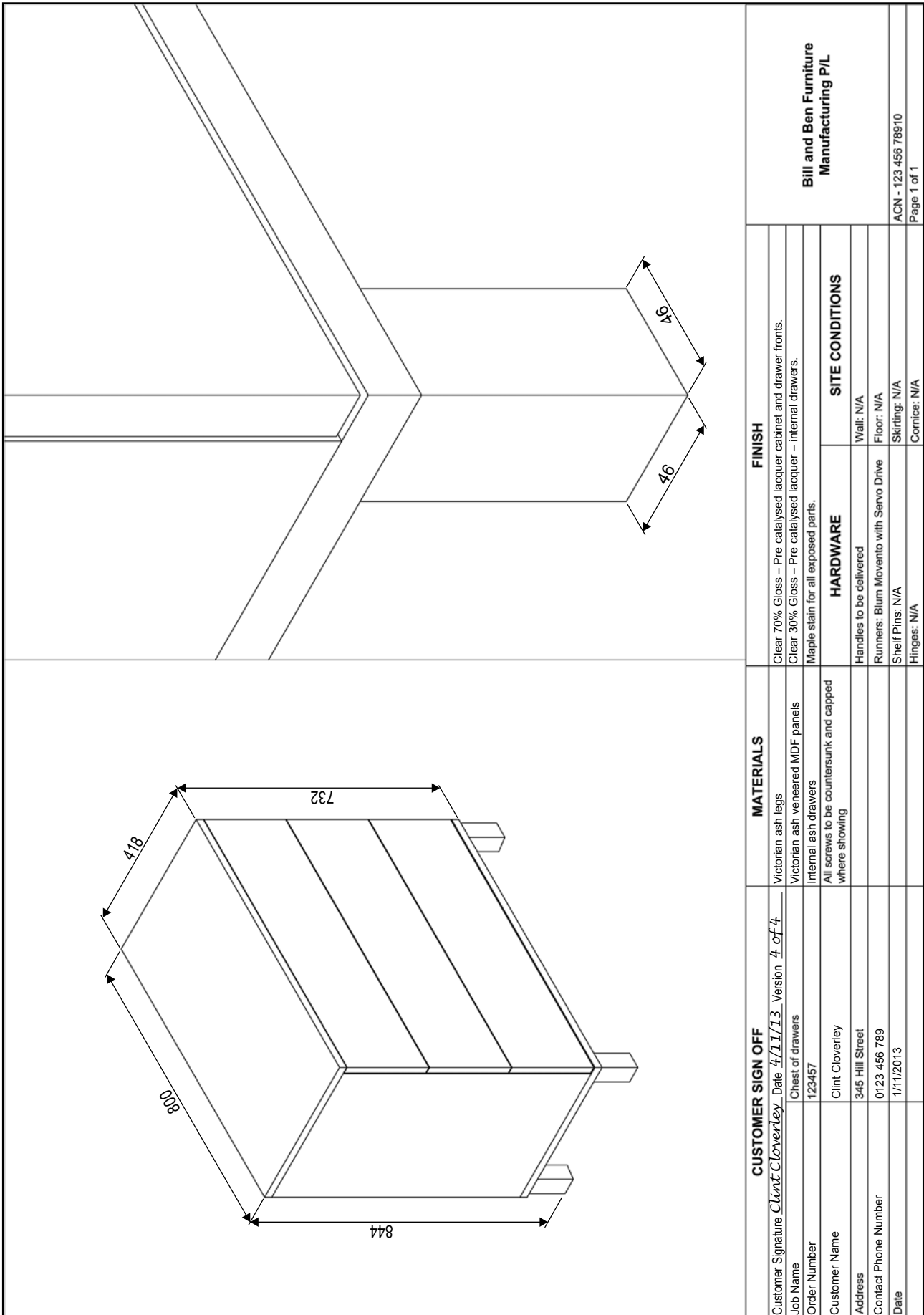


Figure 2

Question 8 (4 marks)

- a. How many drawer runners are required? 1 mark

- b. What are the overall dimensions of the legs? 1 mark

_____ mm × _____ mm × _____ mm

- c. What colour is the finish to be used for the completed job? 1 mark

- d. What information on the plan indicates that this is the latest version? 1 mark

Question 9 (2 marks)

What does the term 'traceability' mean when sourcing wood?

Question 10 (3 marks)

Identify three documents that a team leader should provide to team members to ensure that cabinets are correctly assembled.

- _____
- _____
- _____

Question 11 (2 marks)

One of the components that was provided for assembly is missing a label.

Which documents could you use to work out the details of the component?

Question 12 (4 marks)

Fill in the blanks to complete the assembly sequence for a single-door base cabinet for a kitchen.

1	<i>Check all parts are correct and all hardware is available</i>
2	
3	<i>Join one side to the bottom</i>
4	
5	
6	<i>Fit back and 'square up' cabinet</i>
7	

Question 13 (5 marks)

The label in Figure 3 is on one of the components that your team is assembling.

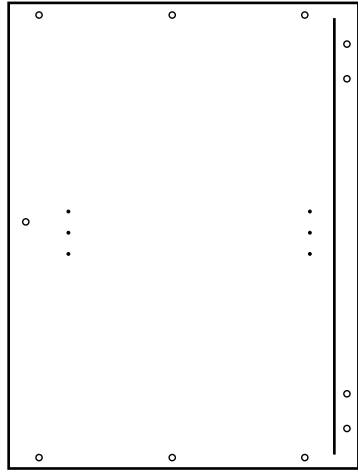
Job: Tom and Carol Smith Room: Kitchen Cabinets: 1 of 13 Part: 5 of 104 This Cabinet: Part 5 of 7 Size: 717 × 559 × 16 Material: White_HMR_PB_16 mm Edging: 1L Door Edge: Ext: Int: 1 mm × 22 mm colour Other: Comment: End exposed in dishwasher space	23/05/2013 08:22 AM Left End 2 Door Base 
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Figure 3

a. How many parts are required for this cabinet? 1 mark

b. What does 'White_HMR_PB_16 mm' mean? 2 marks

When you inspect the component, you notice that the edge tape is damaged and needs to be replaced. You remove the edge tape and take the part to the edge bander operator.

c. What edge tape do you ask the operator to apply? 1 mark

d. To which edge of the panel should the edge tape be applied? 1 mark

Question 14 (1 mark)

Number the steps (1–9) to show the correct method for sharpening a damaged plane blade.

Method	Step
Grind blade to the correct angle	_____
Reassemble blade and backing iron	_____
Square blade on a bench grinder	_____
Undo the cap screw from the backing iron	_____
Strop blade until all traces of burr are removed	_____
Hone back of blade on a sharpening stone	_____
Remove plane blade and cap iron from plane	_____
Hone angle on bevel back and forth until burr is removed	_____
Replace cap iron and blade in body of plane and adjust	_____

Question 15 (3 marks)

Biscuit or plate joiners can be used for the following types of joints.

Provide an example of where each joint may be used. (One entry has been prepared for you.)

Type of joint	Example of where this joint may be used
<i>butt joints</i>	<i>tabletops</i>
corner joints	
intermediate joints	
mitre joints	

Question 16 (2 marks)

Figure 4 shows a pair of drawer sides.

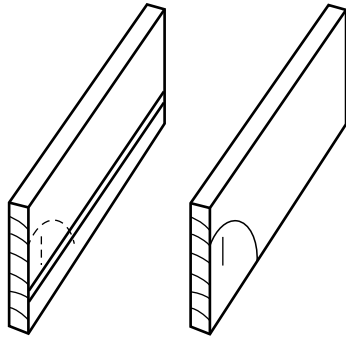


Figure 4

What do the markings on the drawer sides indicate?

Question 17 (3 marks)

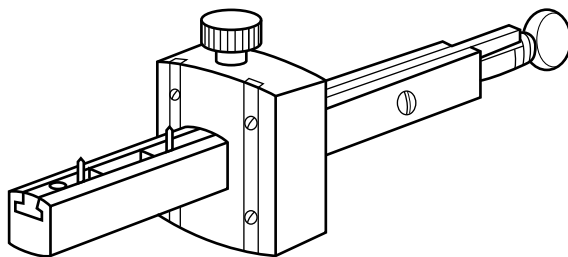


Figure 5

Identify the tool that is shown in Figure 5 and briefly describe how it is used.

tool _____

use _____

SECTION C – Case study**Instructions for Section C**

Answer all questions in the spaces provided. Refer to the insert when answering Questions 1–3. Use explanatory diagrams, charts and sketches if you believe they will improve your answers.

Question 1 (22 marks)

- a. Complete the cutting list below for each part of the ash library chair that is labelled in Figure 1 in the insert.

10 marks

Cutting list for the ash library chair					
Item	Description	No. of pieces	Length (mm)	Width (mm)	Thickness (mm)
a	back leg	2	1095+		38
b	front leg	2		38	38
c	front seat rail	1	412	55	32
d	back seat rail	1		55	32
e	side seat rail	2	321	55	32
f	corner block	4	1 @ 400		30
g	top rail	1	355	90	22 _____ _____
h	intermediate back rail	1		60	22 cut parallel to pattern from 60 × 45
i	centre back slat	1	405		15
j	back slat	2	405	40	15
k	front/back seat frame	2	_____ 1 @ 355+		20
l	seat frame side rail	2	330	57	20
m	side stretcher rail	2		32	28
n	cross stretcher rail	2	1 @ 447 1 @ 429	38	20

b. Calculate how much material you would need to complete the following sections of the chair.

- back legs
- seat frame
- back slats

3 marks

c. ‘Nesting’ is a process used to save money.

Which three components on the cutting list in **part a.** would be suitable to ‘nest’?

3 marks

- _____
- _____
- _____

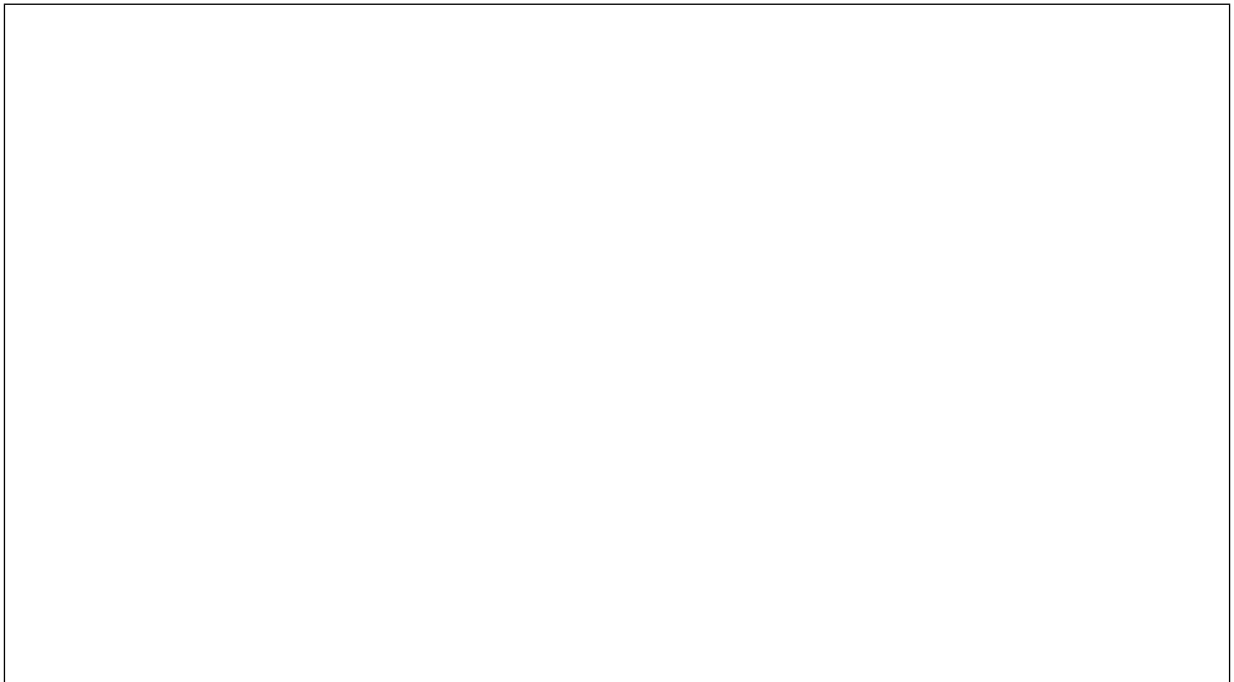
- d. The four corner blocks are cut from a single piece of timber.
Draw how you will obtain the four blocks from this piece of timber by 'nesting'.
Include dimensions in your diagram.

2 marks



- e. Draw the plan view of the seat frame to be upholstered in leather and show
- the joining method to be used
 - the width at the back of the seat
 - the width at the front of the seat
 - the depth of the seat from front to back.

4 marks



Question 2 (4 marks)

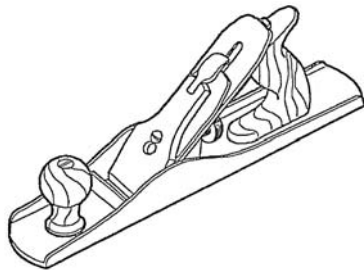
Describe, in five steps, your work plan for constructing the ash library chair.

1. *Glue/clamp front legs and all rails* _____
2. _____
3. _____
4. _____
5. _____

Question 3 (9 marks)

These three tools are used when making a chair.

- 1.

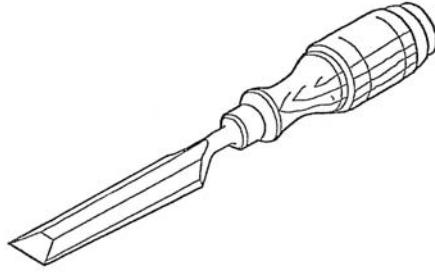


Identify the tool.

How is this tool used when making a chair?

How do you ensure that this tool is in working order?

2.

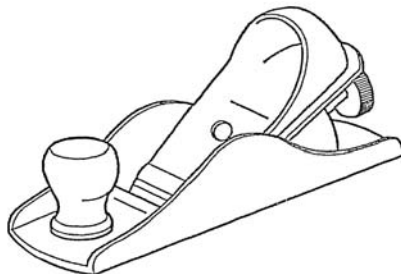


Identify the tool.

How is this tool used when making a chair?

How do you ensure that this tool is in working order?

3.



Identify the tool.

How is this tool used when making a chair?

How do you ensure that this tool is in working order?

Insert for Section C

Please remove from the centre of this book during reading time.

An ash library chair is required for the library of the local secondary school as part of its centenary celebrations. It will have an upholstered leather seat that will be completed by a local upholsterer. Both the chair and the seat frame will be made by the furniture maker.

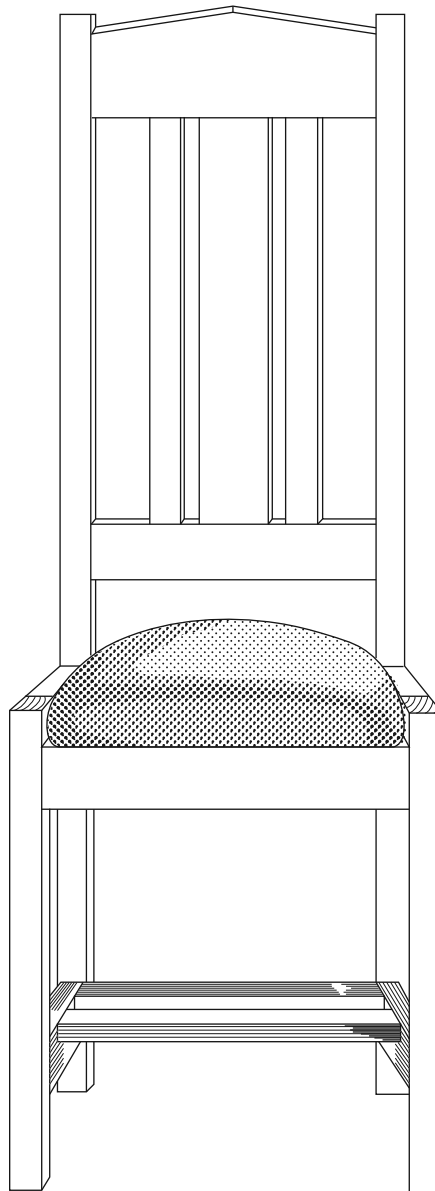


Figure 1

Specifications and construction details for the ash library chair

- The overall height of the chair at the front, excluding the upholstered seat, is 443 mm.
- The overall depth of the chair at seat level is 455 mm.
- The overall width of the chair at the front is 488 mm.
- The side rails are flush with the top of the front leg and are at 90° to the vertical part of the back leg. These rails are cut square on the 55 mm face and at 86° on the 32 mm face edge so that the overall width at the back of the chair at seat level is 431 mm.
- All front, back and side seat rails are dowelled to the front and back legs.
- The back and front seat rails are set down 22 mm lower than the side seat rails to encase the upholstered seat, which is screwed to the chair through the four corner blocks. These in turn have been fitted to each corner and are level/flush with the top edge of the front and back seat rails. The corner blocks are then glued and screwed to each corner. The corner blocks are nested and cut from a piece of timber that is 400 mm long × 60 mm wide × 30 mm thick.
- The top and intermediate rails for the back of the chair are machined to 90 mm × 45 mm and 60 mm × 45 mm square-dressed section, prior to the curved and parallel pattern (22 mm thick) being placed on the 45 mm face edge of each piece, scribed and cut to shape on the band saw. These two components are cleaned up using a spokeshave to remove the saw cuts and sanded to a smooth finish. The top back rail is also tapered to 75 mm at each end and is dowelled to the leg 15 mm below the top of the leg on each side. The intermediate rail is also dowelled to both legs, allowing space for the length of the back slats.
- The back centre slat (1 @ 70 mm × 15 mm) and the two accompanying narrower slats (2 @ 40 mm × 15 mm) are cut to length (405 mm) and dowelled to the top and intermediate rails, centred and allowing a 15 mm gap between each slat.
- The side stretcher rails (2 @ 420 mm × 32 mm × 28 mm) are mortised/tenoned into the front and back legs after a dry assembly to enable the correct angle for the front and back tenons to match up to the inside face of each leg. The tenon on each end of the stretcher rails will be 20 mm × 20 mm and fitted to a depth of 20–22 mm, which will be needed for each mortise. A 20 mm diameter drill bit will be used to remove the bulk of the waste from the mortise, and a sharp chisel and mallet will be used to square up all four mortises. The side stretcher rails are then pre-fitted before assembly.
- The two cross stretcher rails (1 @ 447 mm × 38 mm × 20 mm and 1 @ 429 mm × 38 mm × 20 mm) are fitted using an angled tee-halving joint on both the underside ends of the cross stretcher rails and the top faces of the side stretcher rails. This will enable the cross stretchers to finish flush with the top face of the side stretcher rails when assembled.
- The longest cross stretcher is positioned 185 mm back and parallel to the inside front legs and the shorter-length cross stretcher is positioned 293 mm back and parallel to the inside front legs. All stretchers are positioned 140 mm to the top of the stretcher assembly from the base of the legs.
- When the chair has been assembled, the seat frame timber (57 mm width × 20 mm thickness) can then be constructed using dowel joints. The back and front rails are cut to size and placed in the chair frame, and then the side rails are placed against the side seat rail, and a pencil is used to scribe the length and angle of each end. The length and angle are cut to size and the dowelling process completes the job, with the gluing and cramping remaining. When dry, the frame is cleaned and fitted so that space is left for the thickness of the upholstery cover to fill the gap, ensuring that the completed frame and cushion fit snug against the side seat rails.
- Both back and front legs are machined to 38 mm thickness from 50 mm sawn undressed timber, with the front legs square at that size. The back legs from the seat down start at 50 mm × 38 mm section, lean away at 3° and taper to 38 mm × 38 mm on the inside back leg. The top part of the back leg also starts at 50 mm × 38 mm from the seat up, leans away at 6° and tapers to 32 mm at the top and also on the outside face. Both back legs are produced from one piece of sawn timber (1150 mm × 150 mm × 50 mm). A leg pattern is used and nested to enable two legs to be sourced, thus saving material.
- All timber used is to be Victorian ash timber.

END OF INSERT FOR SECTION C