

STUDENT NUMBER Letter

VCE VET FURNISHING

Written examination

Wednesday 3 November 2021

Reading time: 11.45 am to 12.00 noon (15 minutes)

Writing time: 12.00 noon to 1.30 pm (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	20	20	20
B	15	15	40
C	10	10	40
			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 correction fluid/tape.

Materials supplied

- Question and answer book of 25 pages
- 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.
- Unless otherwise indicated, the diagrams in this book are **not** drawn to scale.
- 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.
- You may keep the detached insert.

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.

Unless otherwise indicated, the diagrams in this book are **not** drawn to scale.

Question 1

Which one of the following joints is used to join solid timber rails and stiles when constructing a doorframe?

- A. biscuit joint
- B. screw joint
- C. dowel joint
- D. butt joint

Question 2

Which one of the following statements about occupational health and safety (OH&S) is correct?

- A. Production team leaders make the safety rules.
- B. Qualified tradespeople will always work safely.
- C. Every person who works in a company is expected to work safely.
- D. WorkSafe Victoria ensures sufficient safety training is provided for new workers.

Question 3

David is making 10 cabinets using melamine sheets. Each cabinet requires 0.52 m^2 of melamine. One melamine sheet measures 2.88 m^2 .

How many melamine sheets does David need?

- A. 1 sheet
- B. 2 sheets
- C. 5 sheets
- D. 10 sheets

Question 4

The 3:4:5 formula is used to check

- A. for twist.
- B. the mix ratio.
- C. the total area.
- D. for square.

Question 5

Tenons on a 20 mm thick rail should be

- A. 5 mm thick.
- B. 7 mm thick.
- C. 15 mm thick.
- D. 20 mm thick.

Question 6

To ensure solid timber door panels have an even-lined figure, which type of timber must be selected?

- A. spalted timber
- B. spiral grain timber
- C. back-sawn timber
- D. quartersawn timber

Question 7

What are the grinding and honing angles for a bevelled edge chisel?

- A. grinding angle of 20°, honing angle of 25°
- B. grinding angle of 25°, honing angle of 20°
- C. grinding angle of 25°, honing angle of 30°
- D. grinding angle of 30°, honing angle of 35°

Question 8

Which one of the following hand tools is used to measure angles?

A.



B.



C.



D.



Question 9

Which one of the following is the acceptable tolerance when fitting drawers?

- A. + or – 0 mm
- B. + or – 1 mm
- C. + or – 3 mm
- D. + or – 5 mm

Question 10

The function of winding sticks is to check for

- A. twist.
- B. square.
- C. parallel.
- D. roll.

Question 11

The clearance hole for a woodscrew is

- A. half the diameter of the woodscrew.
- B. the same diameter as the shank of the woodscrew.
- C. 1 mm smaller than the diameter of the shank of the woodscrew.
- D. no greater than 1 mm larger than the diameter of the woodscrew.

Question 12

What quantity of veneered wood panelling is required for a wall that is 2.44 m high and 4.88 m long?

- A. 10.907 m²
- B. 11.709 m²
- C. 11.907 m²
- D. 11.972 m²

Question 13

A ball bearing is fitted on a flush cutter to

- A. follow a template or pattern.
- B. guide the depth of the router bit.
- C. prevent burn marks on the timber.
- D. prevent chipping to the piece of timber.

Question 14

Which one of the following is the most appropriate drill bit to use when drilling for a circular cable duct at the back of a desk?

- A. auger drill bit
- B. dowel drill bit
- C. masonry drill bit
- D. hole saw drill bit

Question 15

What is a shadow line on a piece of furniture?

- A. a small, even gap between two parts of the piece of furniture
- B. the place where two pieces of timber join
- C. a flame figure on drawer fronts
- D. a taper on the legs

Question 16

A client has requested a small bookcase made from Victorian ash veneered particle board (VPB). The client would like the grain to wrap up the sides and across the top.

Which one of the following joints is required between the top and the sides?

- A. mitre joint
- B. rebate joint
- C. butt joint
- D. dovetail joint

Question 17

20 mm × 1.6 mm flathead nails are used to fix a drawer bottom to the back of a drawer.

Which one of the following types of hammers should be used to drive the nails?

- A. claw hammer
- B. creasing hammer
- C. ballpein hammer
- D. Warrington hammer

Question 18

Which one of the following power tools is used when machining the moulding on the edge of a solid timber tabletop?

- A. circular saw
- B. belt sander
- C. jigsaw
- D. router

Question 19

How is a table base checked for square and checked for twist?

- A. Measure the frame from end to end along both of the longest rails to check for square and use a 1 m ruler to check for twist along the top edges.
- B. Measure the diagonals from outside the legs from corner to corner for square and sight the top of both end rails by eye to check for twist.
- C. Measure the diagonals from the inside legs from corner to corner for square and measure the height of the frame at each end for twist.
- D. Measure across the end rails of the frame to check for square and use a 1 m ruler to check for twist along the top edges.

Question 20

A kitchen base cabinet has two sides that are 740 mm high and 560 mm wide.

What is the maximum number of sides that can be cut from a standard sheet (2400 mm × 1200 mm) of melamine?

- A. 4
- B. 6
- C. 8
- D. 12

DO NOT WRITE IN THIS AREA

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

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

Unless otherwise indicated, the diagrams in this book are **not** drawn to scale.

Question 1 (2 marks)

Figure 1 shows a leg and a rail.

Mark out the position of the dowel joints for two dowels.

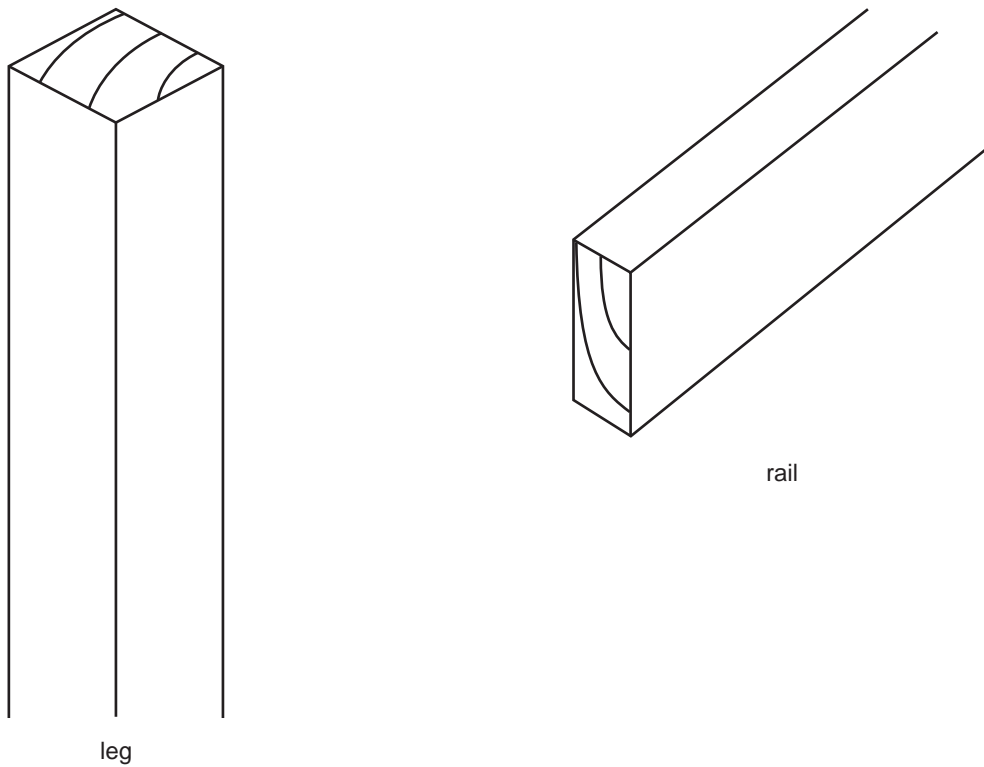


Figure 1

Question 2 (2 marks)

Draw the face and face edge marks on the piece of timber shown in Figure 2.

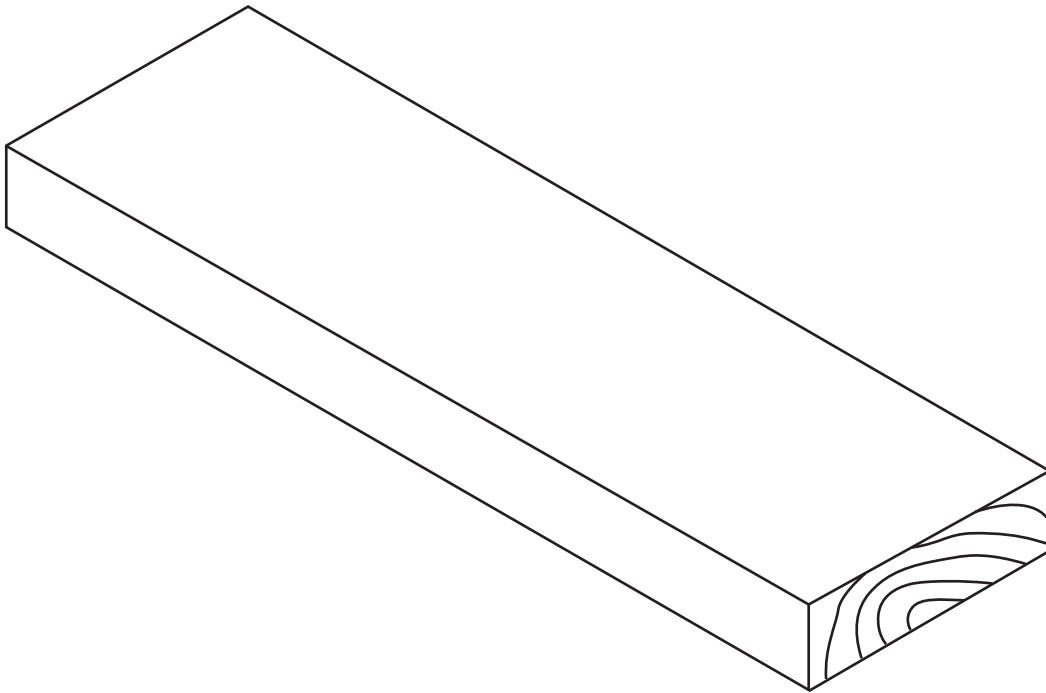


Figure 2

Question 3 (2 marks)

When drilling the screw holes to fit 20 kitchen door handles, what are two reasons for using a jig?

1. _____
2. _____

DO NOT WRITE IN THIS AREA

Question 4 (2 marks)

The dowel drill bit in Figure 3 has a centre point and spurs.

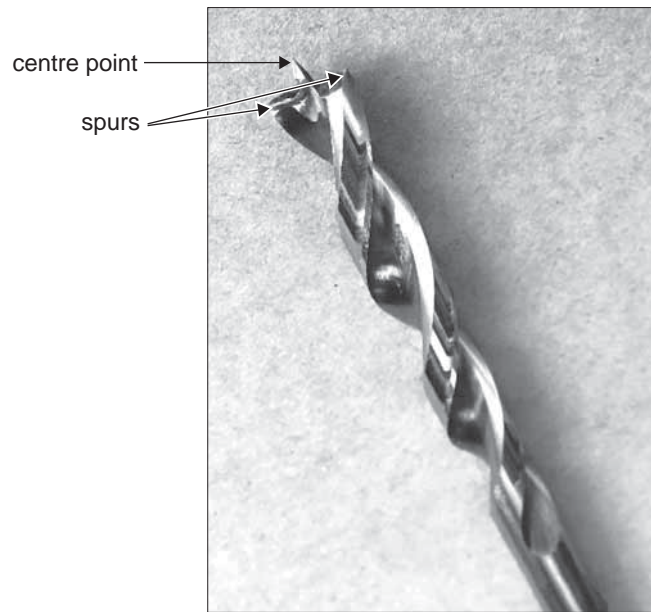


Figure 3

What is the purpose of the centre point and spurs?

Centre point _____

Spurs _____

Question 5 (5 marks)

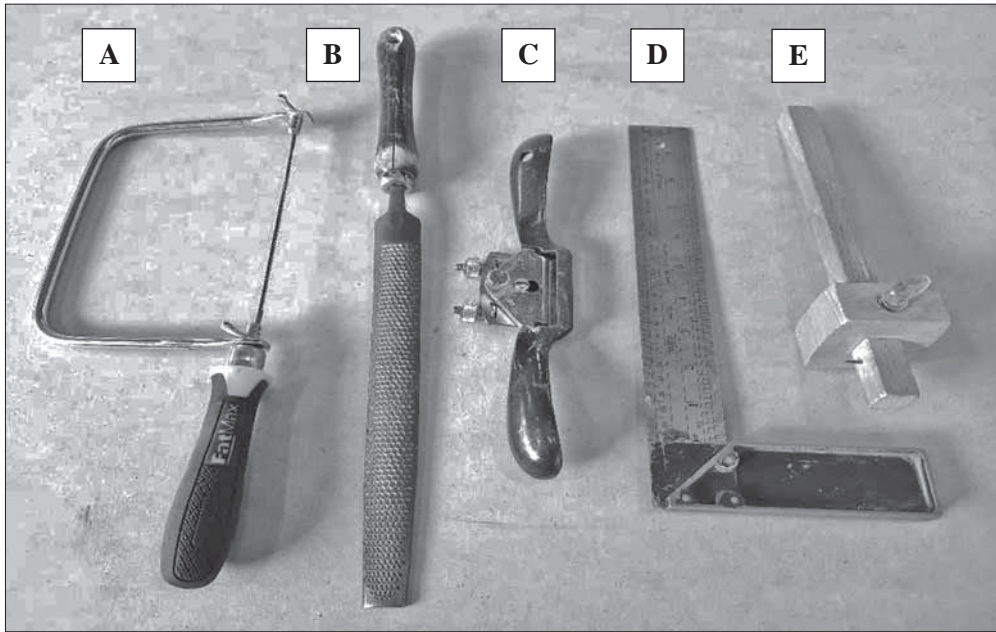


Figure 4

Name the five hand tools shown in Figure 4 and describe what each hand tool is used for.

Hand tool	Name of hand tool	What the hand tool is used for
A		
B		
C		
D		
E		

Question 6 (2 marks)

When honing a plane iron on a sharpening stone, what are the two main reasons for using water on the stone?

1. _____

2. _____

Question 7 (3 marks)

Name each power tool shown below and provide one task the tool can be used for.



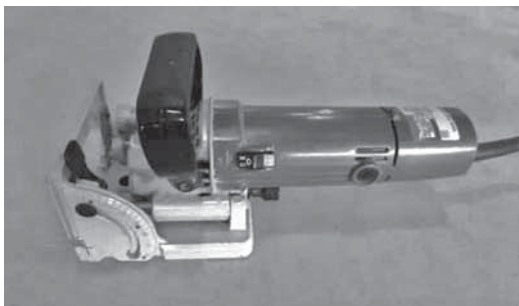
Name

Task



Name

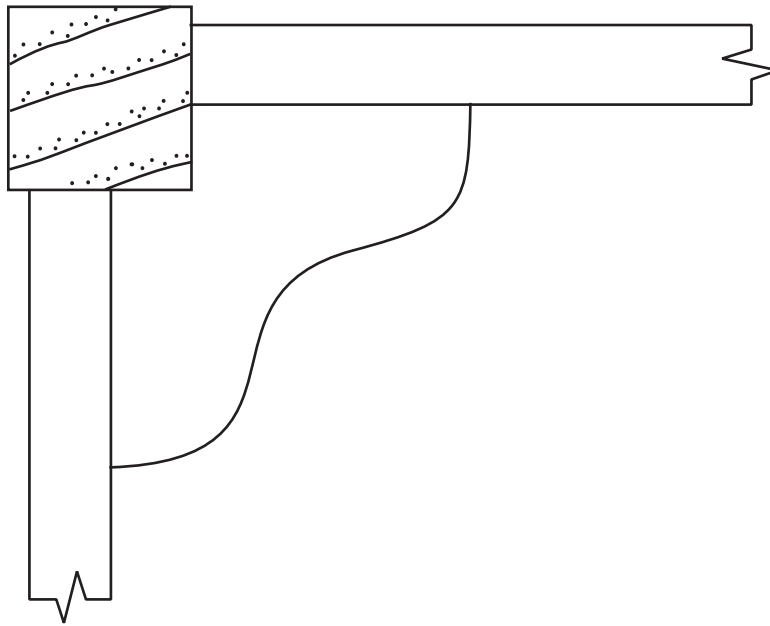
Task



Name

Task

DO NOT WRITE IN THIS AREA

Question 8 (3 marks)**Figure 5**

- a. Sketch the direction of the grain on the corner block in Figure 5. 1 mark
- b. Explain why the grain should run in the direction you have sketched in **part a**. 1 mark
-
- c. Why are corner blocks important for the frame of a table or chair? 1 mark
-

Question 9 (2 marks)

The cabinet carcass in Figure 6 is constructed from 19 mm veneered particle board (VPB).

The cabinet top will be screwed through the front and back top rails of the carcass.

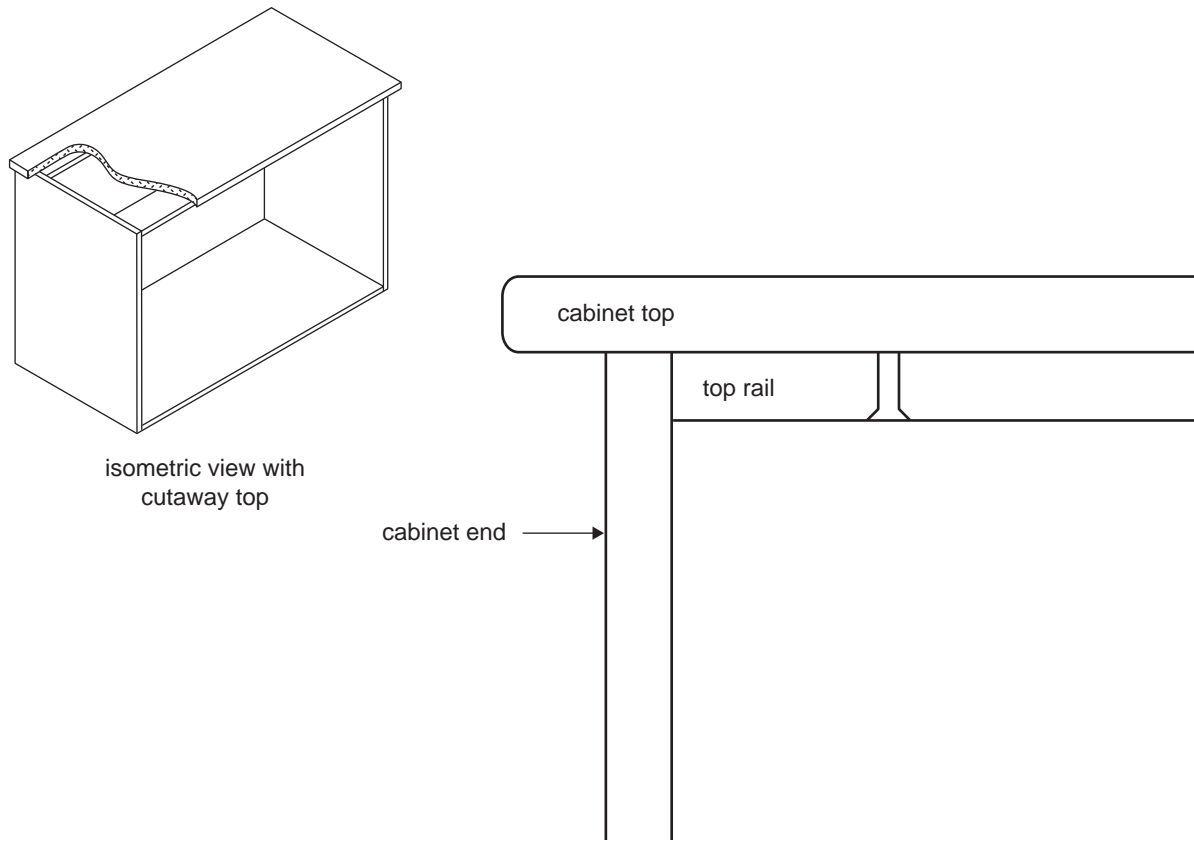


Figure 6

- a. What screw length is required to fix the top? 1 mark

- b. How deep will the screw go into the top? Give your answer in millimetres. 1 mark

Question 10 (4 marks)

The square coffee table in Figure 7 is made from radiata pine.

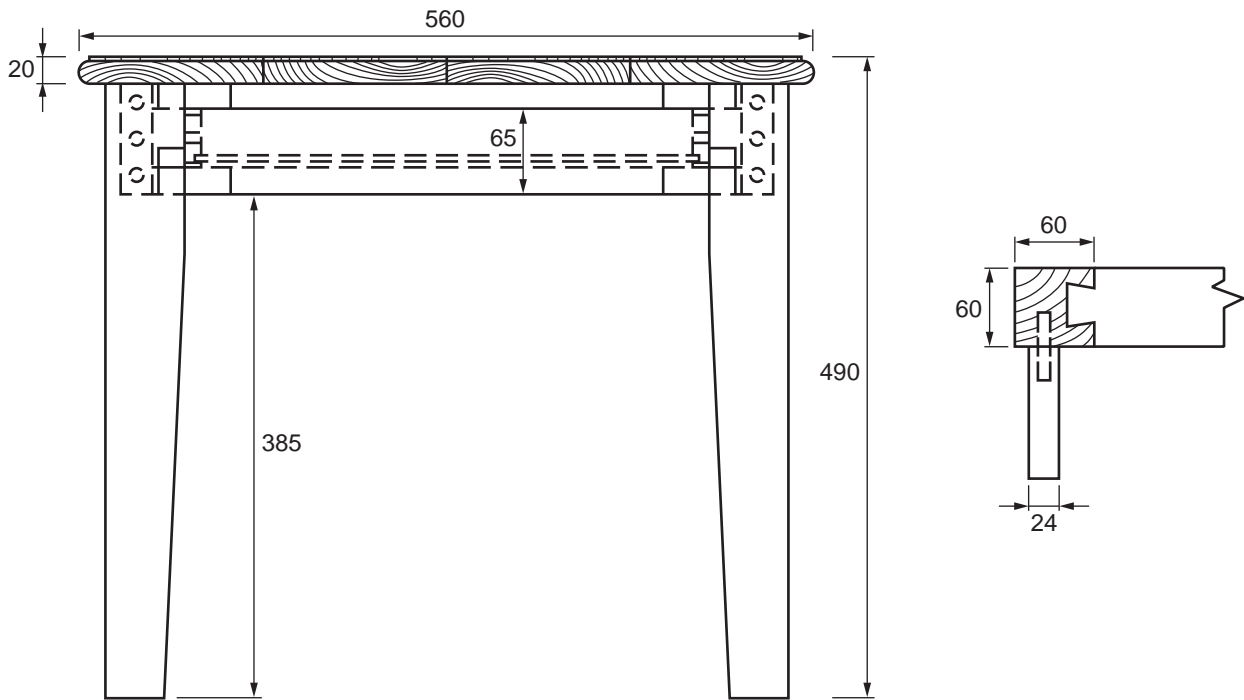


Figure 7

- a. How many lineal metres of 75 mm × 75 mm rough sawn timber are required for the four legs of this coffee table? Allow 10% extra for waste. Show your working. 2 marks

- b. Name two joints used in the construction of this coffee table. 2 marks

1. _____

2. _____

DO NOT WRITE IN THIS AREA

Question 11 (4 marks)

Sally has cut and prepared all the components for the chair shown in Figure 8. David is responsible for assembling the chair. The chair has been manufactured with dowel joints.

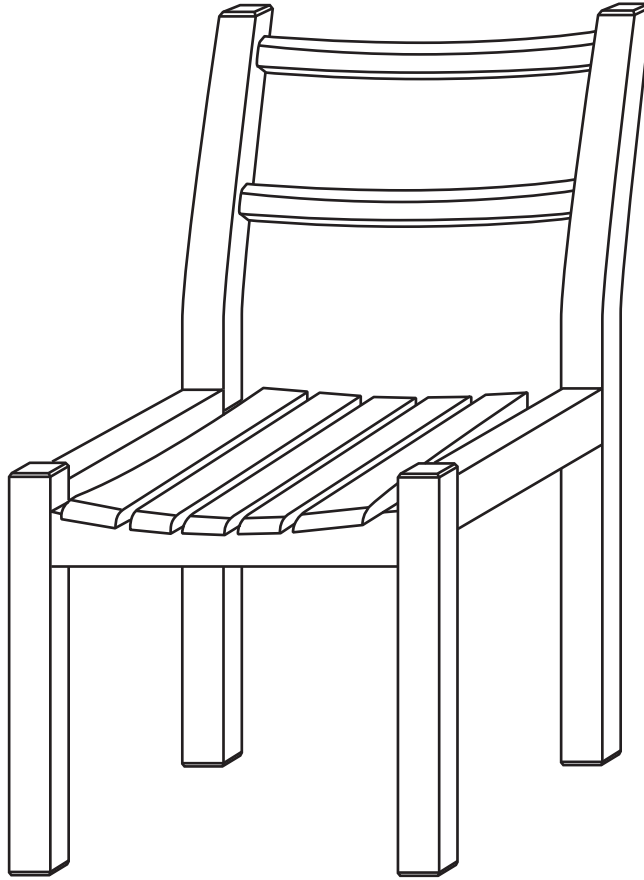


Figure 8

What are the four main stages of the assembly process that David should follow?

Stage number	Stage
1	
2	
3	
4	

Question 12 (3 marks)

Amanda plans to make an occasional table based on photographs provided by the client. The client's photographs are shown in Figure 9.



Figure 9

- a. What joint will Amanda use to join the top rails together? 1 mark



- b. What are two joints that could be used to attach the rails to the legs? 2 marks

1.

2.

Question 13 (2 marks)

Name each item of hardware shown below.

Item of hardware	Name
	
	

Question 14 (2 marks)

A kitchen manufacturer organises the installation of a client's kitchen. It takes three employees 9.5 hours to complete the task, plus three hours of travel and set-up and pack-up time. One employee is a tradesperson and the other two are apprentices. The tradesperson currently earns \$27.50 an hour. The apprentices each earn half that amount per hour.

What is the total labour cost for the kitchen manufacturer? Show your working.

Question 15 (2 marks)

A Victorian ash wall unit made with solid timber and VPB must support a very heavy fish tank.

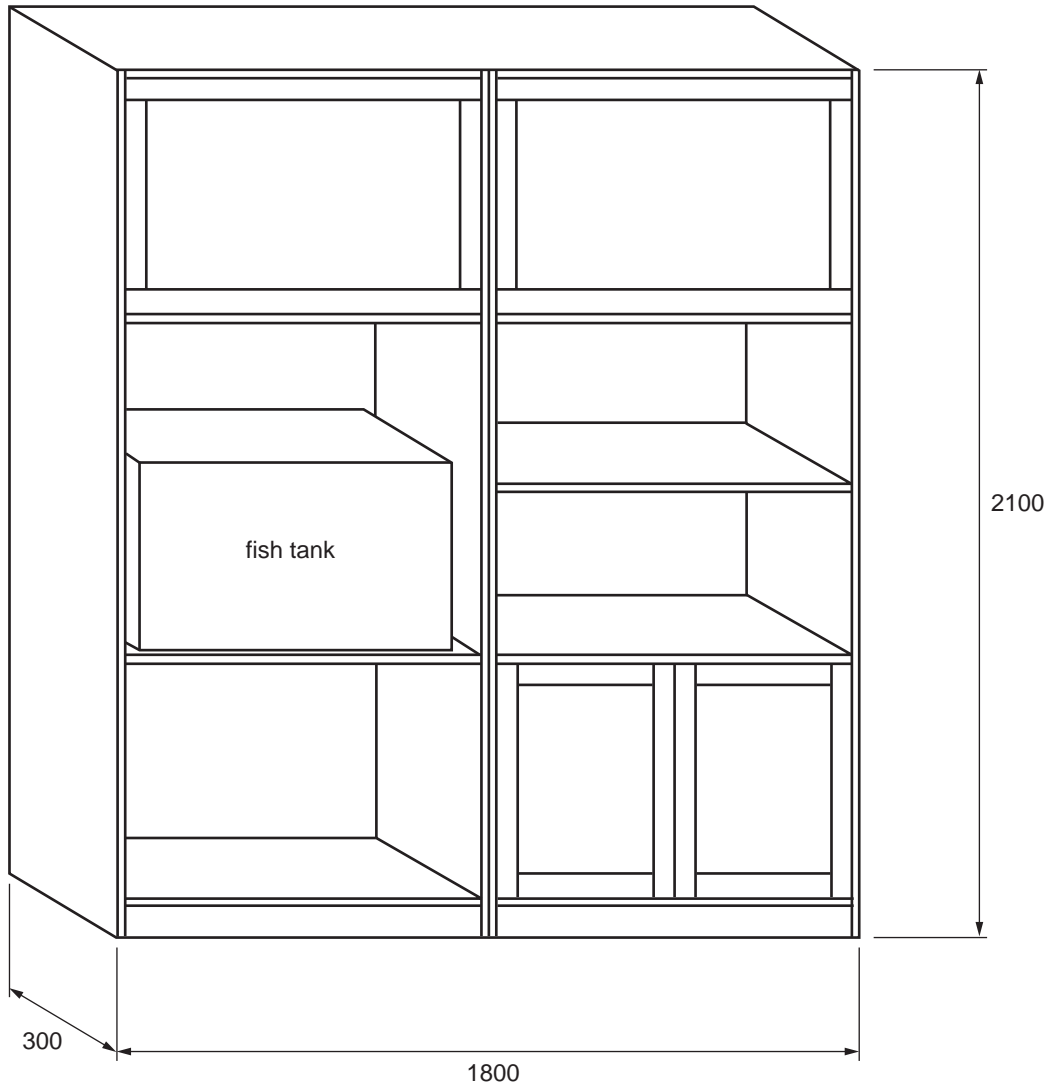


Figure 10

On Figure 10, sketch modifications to the design that would strengthen the shelf for the fish tank and prevent the shelf from bowing. Label your sketch.

DO NOT WRITE IN THIS AREA

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

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

Use the case study provided in the insert to answer the questions in this section.

Use explanatory diagrams, charts and sketches if you believe they will improve your answers.

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

Unless otherwise indicated, the diagrams in this book are **not** drawn to scale.

Question 1 (6 marks)

Complete the table below by filling in the missing information in the bold boxes using the working drawing and specifications.

Cutting list							
Item no.	Item name	No. of pieces	Length (mm)	Width (mm)	Thickness (mm)	Remarks	Material
Table frame							
1	legs	4	244	42	42		Victorian ash
2	long top rails	2		42	42		Victorian ash
3	long bottom rails	2	900	42	42		Victorian ash
4	short top rails	2	466	42	42		Victorian ash
5	short bottom rails	2	466	42	42		Victorian ash
6	long plinth rails	2	816		19	mitred	Victorian ash
7	short plinth rails	2	466	64	19	mitred	Victorian ash
Drawer carcass							
8	top	1	816	516	19	all four edges	Victorian ash VPB
9	sides	2	122		19	one short edge	Victorian ash VBP
10	back	1	816	122	19		Victorian ash VBP
11	division	1	476	122	19	one short edge	Victorian ash VBP
12	drawer false fronts	2	405		19	all four edges	Victorian ash VBP
13	drawer fronts	2	339	69	16	one long edge	black melamine particle board
14	drawer sides	4	450	93	16	one long edge, grooved for drawer bottom	black melamine particle board
15	drawer back	2	339	69	16	one long edge	black melamine particle board
16	drawer bottoms	2		450	4	one long edge	

Question 2 (4 marks)

The project work plan for the coffee table is shown on pages 20 and 21.

Use the following list of steps and tools/equipment required to fill in the missing information in the bold boxes of the project work plan. Use only the numbers in the project list.

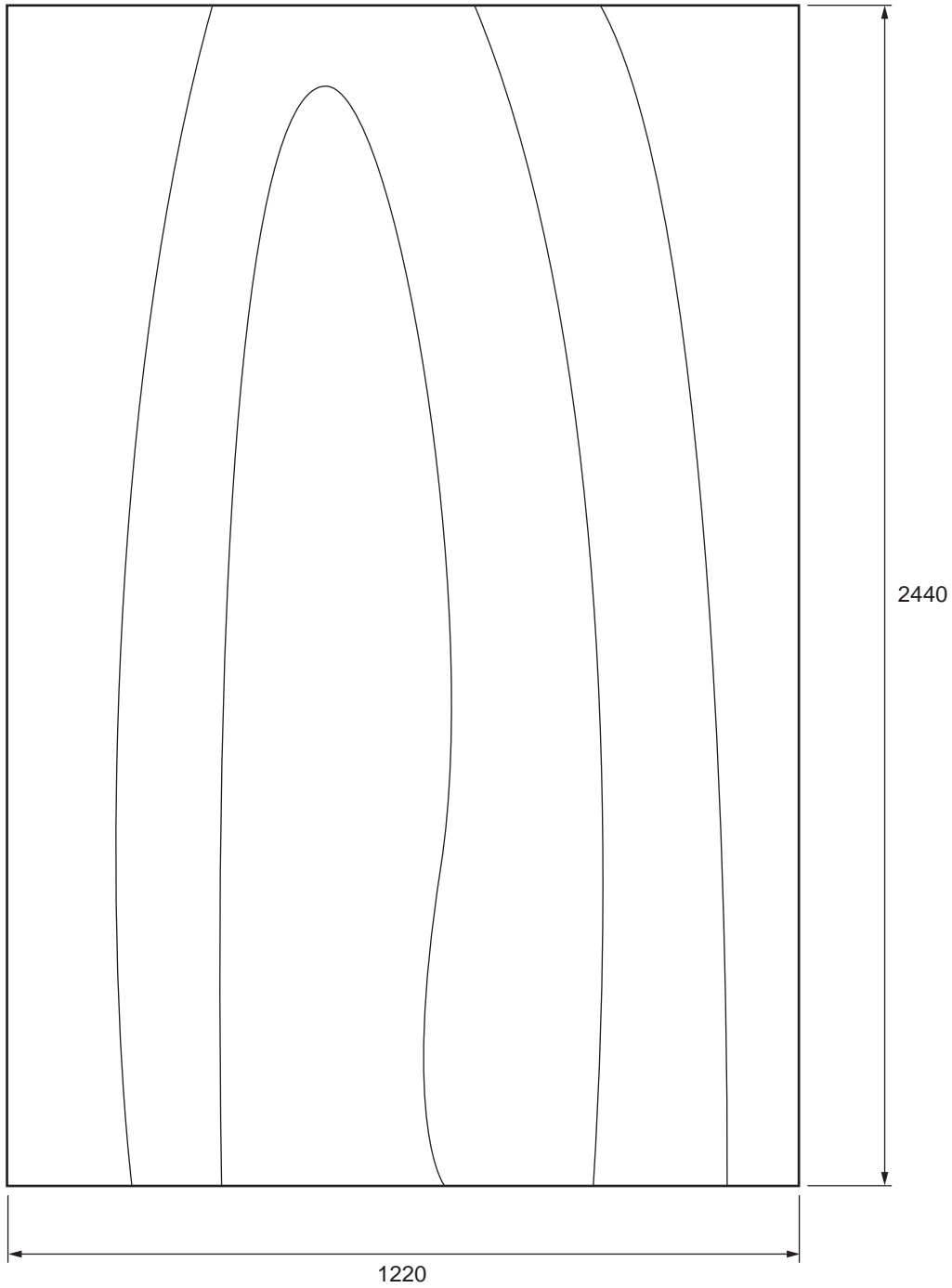
Project list	
Number	Steps and tools/equipment required
1	Mark out and install drawer runners.
2	300 mm steel ruler, pencil, combination square, tape measure
3	melamine board glue, cordless impact driver, rags
4	sanding block, abrasive paper, orbital sander, stain, top coat, spray gun, compressor

Project work plan			
Section	Step	Tools/equipment required	PPE for task
leg frame	Check timber and cut to size.	tape measure, drop saw	foot, hearing and eye protection, protective clothing
	Mark out for loose tenon joints.		foot protection, protective clothing
	Machine loose tenon joints.	domino machine	foot, hearing and eye protection, protective clothing
	Sand all inside faces.	sanding block, abrasive paper	foot protection, protective clothing
	Dry run leg frame.	clamps, tape measure	foot protection, protective clothing
	Glue, clamp and check end frames.	clamps, clamping blocks, glue, rags, 600 mm steel ruler/tape measure	foot protection, protective clothing
	Glue and clamp end frames to side rails, and check.	clamps, clamping blocks, glue, rags, 600 mm steel ruler/tape measure	foot protection, protective clothing
	Rebate for glass top and square out corners.	router with rebate cutter, pencil, combination square, chisel, mallet	foot protection, protective clothing
	Prepare all surfaces for finishing.	sanding block, abrasive paper, orbital sander	foot, hearing, eye and respiratory protection, protective clothing

Section	Step	Tools/equipment required	PPE for task
drawer carcase	Cut and edge all VPB components.	panel saw, edgebander	foot, hearing and eye protection, protective clothing
	Mark out end, rail and top joints.	300 mm steel ruler, pencil, combination square, tape measure	foot protection, protective clothing
	Machine joints.	biscuit cutter	foot, hearing and eye protection, protective clothing
	Dry run drawer carcase.	clamps, tape measure	foot protection, protective clothing
	Glue, clamp and check drawer carcase.	clamps, clamping blocks, glue, rags, 600 mm steel ruler/tape measure	foot protection, protective clothing
		300 mm steel ruler, pencil, combination square, cordless impact driver	foot protection, protective clothing
drawers	Cut and edge all drawer parts.	panel saw, edgebander	foot, hearing and eye protection, protective clothing
	Mark out and drill assembly and runner attachment holes.	300 mm steel ruler, pencil, combination square, cordless drill and impact driver	foot protection, protective clothing
	Assemble drawers.		foot protection, protective clothing
	Fit runners to drawers.	cordless impact driver	foot protection, protective clothing
finishing	Prepare, stain and topcoat all timber and veneered parts.		foot, hearing, eye and respiratory protection, protective clothing
assembly	Fit drawer carcase to leg frame.	cordless impact driver, 300 mm ruler	foot protection, protective clothing
	Fit drawer fronts.	cordless impact driver, 300 mm ruler	foot protection, protective clothing
	Fit glass top.		hand and foot protection, protective clothing

Question 3 (5 marks)

Sketch the optimised cutting plan for the veneered particle board (VPB) parts of the coffee table on the diagram below.



Question 4 (2 marks)

Give two reasons why a full-size set-out is necessary when planning the manufacture of the coffee table.

1. _____
2. _____

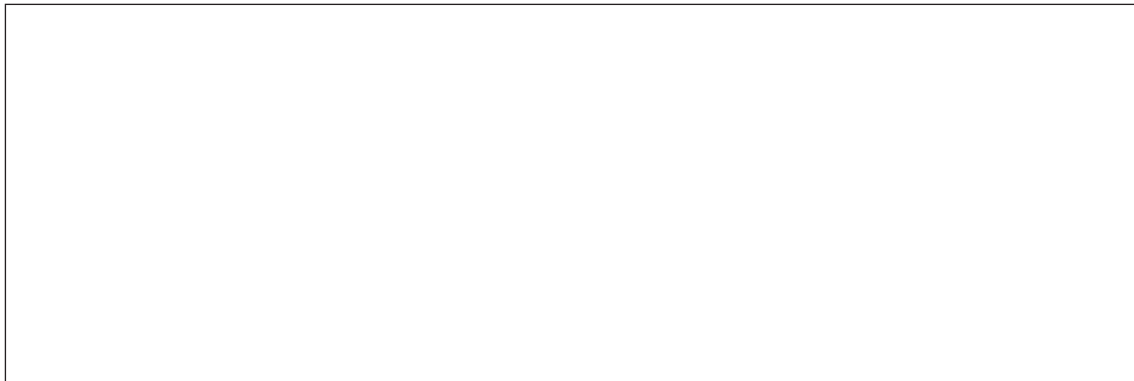
Question 5 (5 marks)

The coffee table has a recessed glass top. The glass sits in a rebate that is routered after the top is assembled.

- a. How would the timber for the square corners be removed? Name the tools and processes used. 2 marks

- b. What **two** measurements are needed when setting up the router to run the rebate? 2 marks

- c. In the box provided below, sketch a router rebate cutter. 1 mark



Question 6 (6 marks)

When using the portable router to run the rebate for the glass top, the dust produced creates a hazard.

Give two methods of protecting a worker from this dust hazard. Provide one advantage and one disadvantage of each method.

	Method 1	Method 2
Advantage		
Disadvantage		

Question 7 (2 marks)

Name one joining method for attaching the ends of the coffee table to the top and bottom rails. Give one reason for choosing this joining method.

Joining method _____

Reason _____

DO NOT WRITE IN THIS AREA

Question 8 (4 marks)

The end frames are clamped to the top and bottom rails.

- a. What are three checks that should be conducted after clamping? 3 marks

1. _____

2. _____

3. _____

- b. Having glued and clamped the table frame together with sash clamps, and completed the quality checks, a slight twist is found.

What can be done to reduce or remove the twist?

1 mark

Question 9 (4 marks)

When preparing surfaces for finishing after planing, at least three abrasive paper grades are used.

List three abrasive paper grades that should be used and give the reason for using more than one grade.

1. _____

2. _____

3. _____

Reason _____

Question 10 (2 marks)

The coffee table must be prepared for shipping to Hobart. The shipping cost to Hobart is \$626/m³.

- a. What are the dimensions of the box required to fit the coffee table for shipping? The external dimensions of the box will be 20 mm greater than the length, width and height of the coffee table. 1 mark

- b. What is the shipping cost of sending one coffee table to Hobart? 1 mark

Insert for Section C

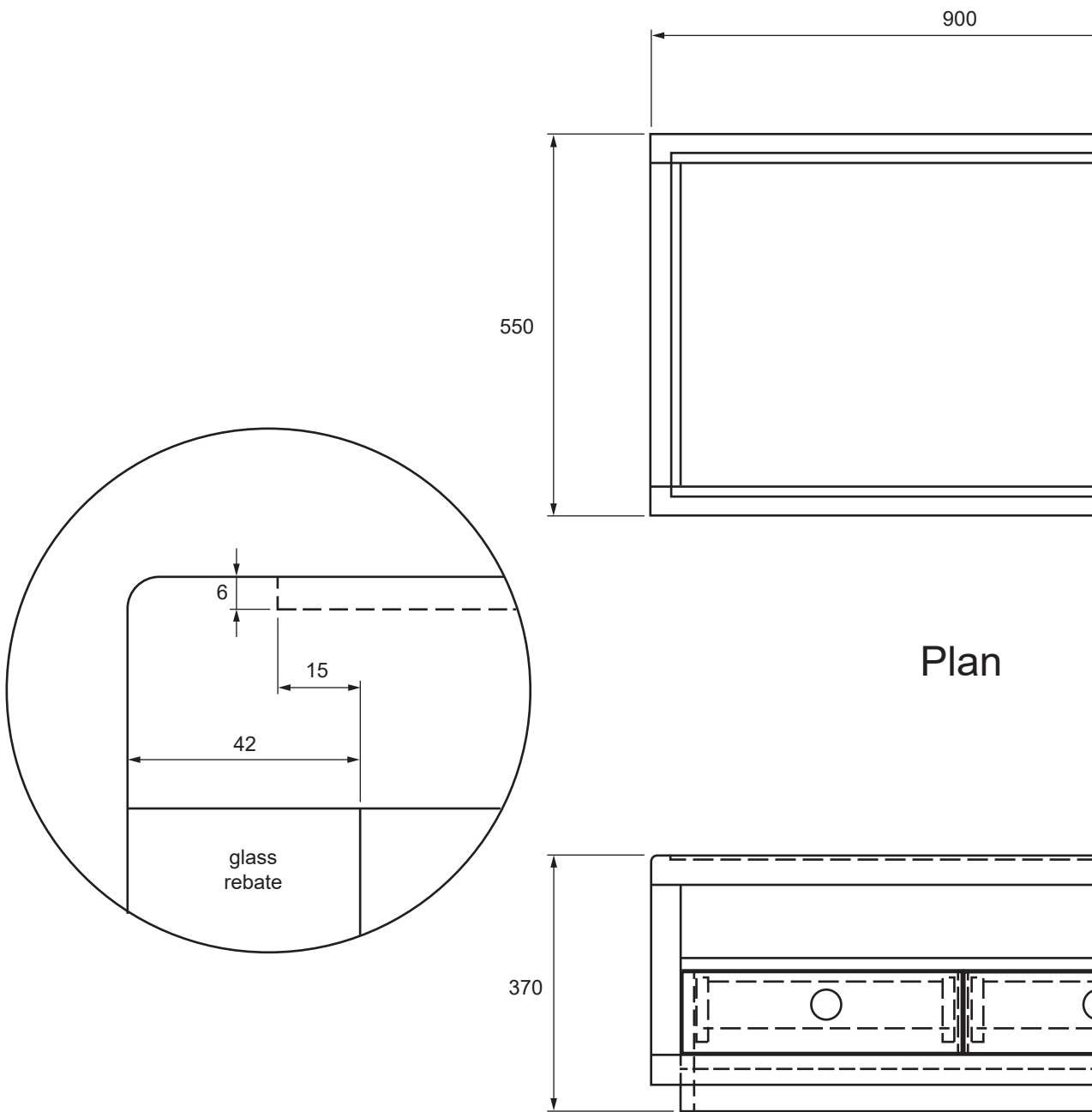
Please remove from the centre of this book during reading time.

Read the following specifications together with the working drawing on pages 2 and 3 of this insert.

Specifications

- dimensions – 900 mm × 550 mm × 370 mm
- timber – Victorian ash
- stain – walnut spirit stain
- finish – water-based polyurethane
- all legs and rail 42 mm × 42 mm Victorian ash
- glass top – 6 mm thick, polished edge, toughened safety glass
- drawer runners – 450 mm soft close undermount
- drawer handles – 50 mm round black flush pull
- drawer false front 2 mm clearance – top, bottom, sides, behind
- drawer carcass – veneered particle board (VPB) 19 mm thick
- drawer sides, front and back – black melamine particle board and hoop pine plywood bases
- plinth is mitre jointed
- drawer carcass screw fixed through 20 mm square timber cleat fitted to lower rails into ends and division
- plinth screw fixed through upper faces into lower rails

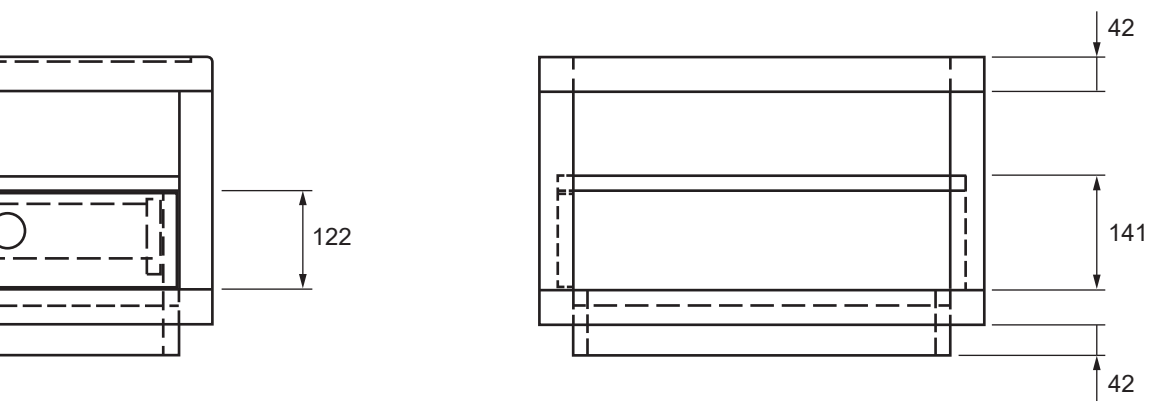
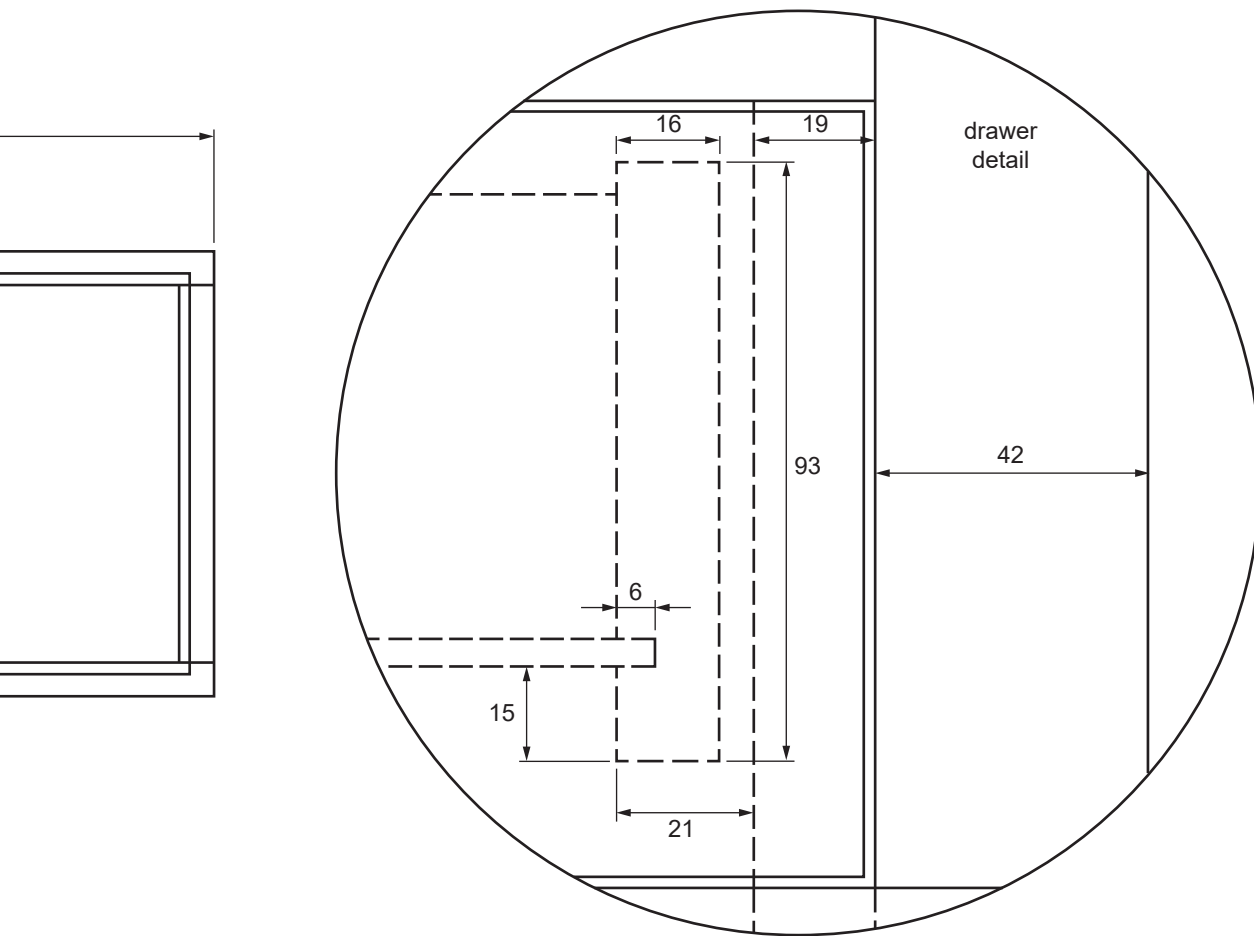
TURN OVER



Plan

Front elevation

Coffee table



Side elevation

Drawn by:	Date: Wednesday, 20 October 2021
Client: Client name	Sheet: 1 of 1

END OF INSERT