

Victorian Certificate of Education
2023

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

									Letter
--	--	--	--	--	--	--	--	--	--------

VCE VET FURNISHING

Written examination

Thursday 26 October 2023

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

Section	Number of questions	Number of questions to be answered	Number of marks
A	20	20	20
B	11	11	40
C	11	11	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 27 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 handsaw is used to cut curves?

- A. dovetail saw
- B. crosscut saw
- C. tenon saw
- D. coping saw

Question 2

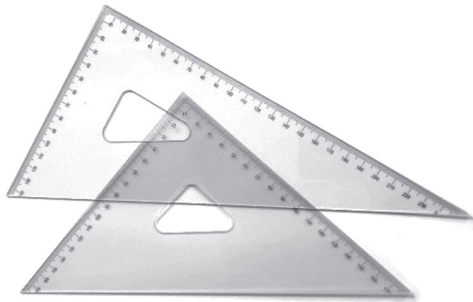
When using a handplane, it should be placed on the bench

- A. on its side.
- B. on its base.
- C. with the blade retracted.
- D. only if your tool box is inaccessible.

Question 3

Which tool is used for measuring the angle of the back leg above seat level of a dining chair on a full-size set-out?

A.



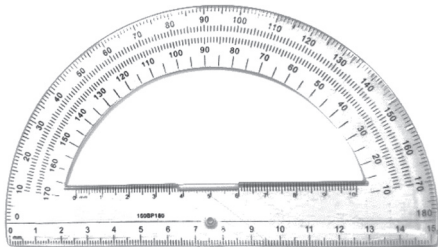
set square

B.



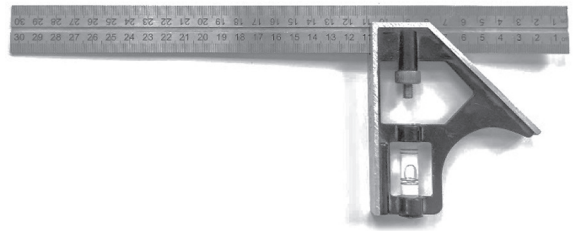
compass

C.



protractor

D.



combination square

Question 4

Which one of the following tasks is performed with the two pins of a mortise gauge?

- A. Mark one parallel line to a given face or edge of timber.
- B. Cut a parallel scribe through the face of veneer on a panel.
- C. Square a line at a right angle to a face or edge of timber.
- D. Mark two parallel lines to a given face or edge of timber.

Question 5

Which one of the following techniques is preferred when cutting with a tenon saw or dovetail saw?

- A. Hold with four fingers, gripping through the handle, pushing lightly.
- B. Hold with two fingers, gripping through the handle, pushing lightly.
- C. Hold with three fingers, gripping through the handle, pushing lightly.
- D. Hold with three fingers, gripping through the handle, forcing the cut.

Question 6

Ben needs to punch the heads of some brads below the surface of a piece of timber.
Which tool will he use with the hammer?

- A. bradawl
- B. nail punch
- C. centre punch
- D. small Pozidriv screwdriver

Question 7

Using the *AS 1100.101-1992 Technical drawing: General principles* drawing standard will help

- A. increase your profits.
- B. keep the drawing neat.
- C. get the drawing completed more quickly.
- D. other tradespersons understand the project.

Question 8

The main body of a dresser is called the

- A. cabinet.
- B. carcass.
- C. carabiner.
- D. casement.

Question 9

When assembling a bedside cabinet, which task should be completed first?

- A. glue up
- B. attach hardware
- C. dry run of glue up of components
- D. remove glue with a damp rag

Question 10

Which leg and rail joint has the largest gluing surface area?

- A. loose tenon
- B. dowel
- C. screws
- D. biscuit

Question 11

Following work health and safety (WHS) procedures

- A. improves profits.
- B. protects your job.
- C. keeps everyone safe.
- D. means wearing personal protective equipment (PPE).

Question 12

What are pincers used for?

- A. removing dominoes or dowels
- B. extracting nails or tacks
- C. cleaning sash and F clamps
- D. tightening screws and bolts

Question 13

Sue is chiselling out the waste on a dovetail tee halving practice joint.

What should Sue do before chiselling the waste?

- A. Hold the timber to the bench with her hand.
- B. Ask someone to hold the timber to the bench.
- C. Use a heavy object to hold the timber to the bench.
- D. Hold the timber in the bench vice.

Question 14

Which one of the following handsaws has the most teeth per inch (TPI)?

- A. rip saw
- B. panel saw
- C. tenon saw
- D. dovetail saw

Question 15

Which is the best hammer to use to insert 15 mm × 1.25 mm bullet head brads?

A.



mash hammer

B.



Warrington pattern hammer

C.



claw hammer

D.

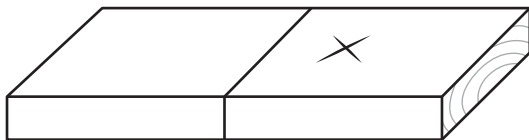


ball pein hammer

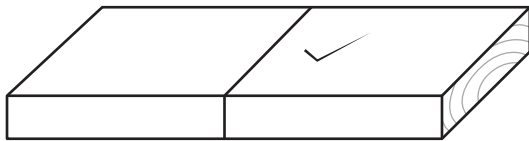
Question 16

Which symbol indicates waste timber when marking out joints?

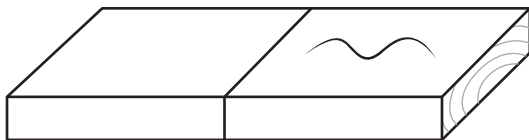
A.



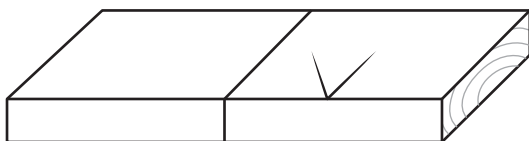
B.



C.



D.



Question 17

On a solid timber price list, which unit of measurement is used?

- A. \$/lineal inch (\$/lin)
- B. \$/centimetre (\$/cm)
- C. \$/lineal metre (\$/lm)
- D. \$/millimetre (\$/mm)

Question 18

The cost of the timber used to make one coffee table is \$58.60.

What is the cost of the timber for eight coffee tables?

- A. \$468.80
- B. \$480.60
- C. \$320.90
- D. \$510.40

Question 19

It is most efficient to sharpen your no. 5 hand plane

- A. at least annually.
- B. when it begins to lose the sharp edge.
- C. only if there are gaps in the cutting edge.
- D. by sending it to a professional sharpening service.

Question 20

Which of the following tasks uses a hand scraper?

- A. smoothing a veneered tabletop
- B. dressing rough-sawn pine
- C. flushing off gum veins
- D. adjusting mitre angles

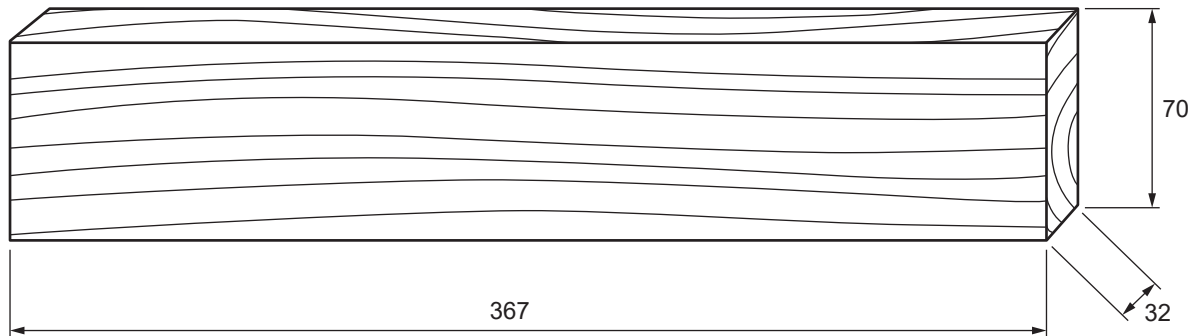
SECTION B – Short-answer questions**Instructions for Section B**

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

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

Question 1 (2 marks)

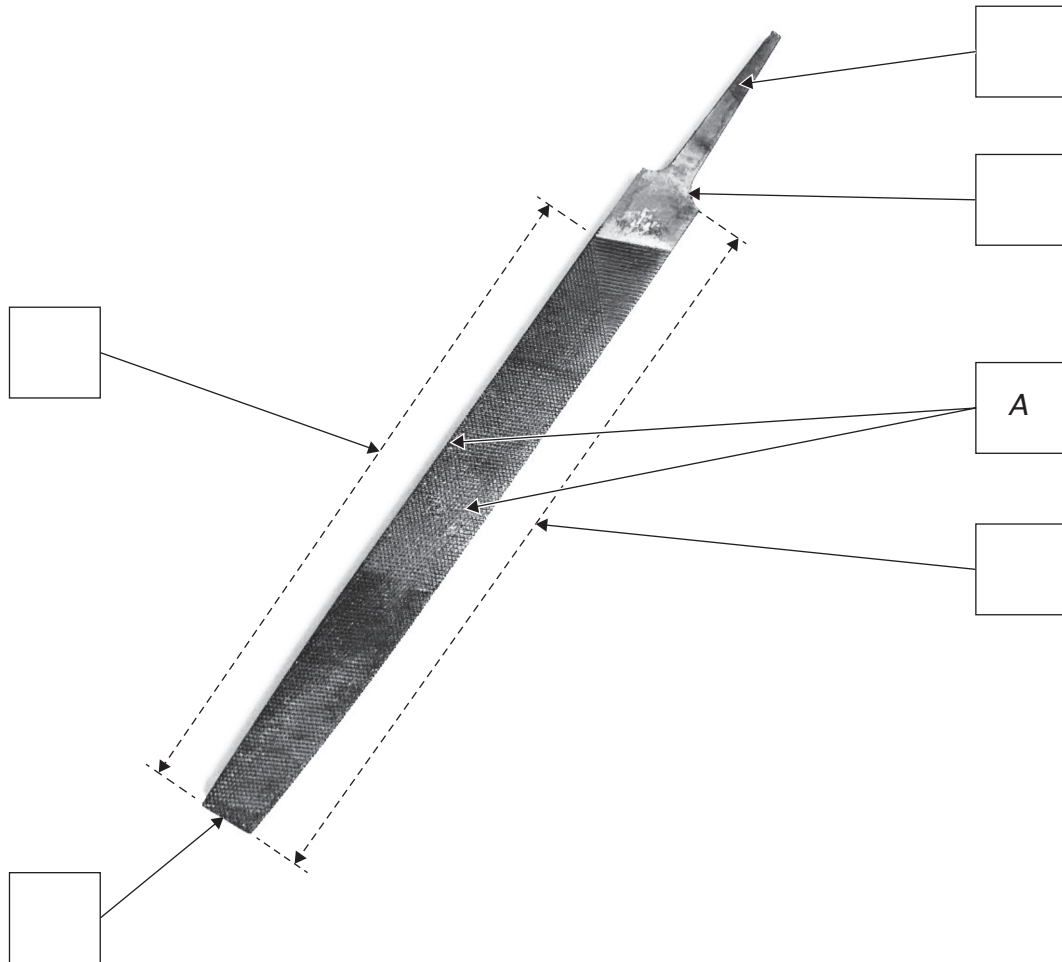
On the diagram below, mark the saw cuts required to make four corner blocks for a chair. Your cuts should minimise short grain and waste.



Question 2 (5 marks)

Label the parts of the mill file shown on the diagram below using the letters **A.–F.** The first part has been provided as an example.

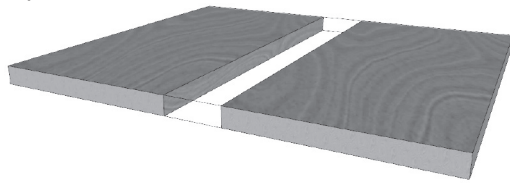
- A.** cutting edges
- B.** tang
- C.** heel
- D.** belly
- E.** point
- F.** length



Question 3 (3 marks)

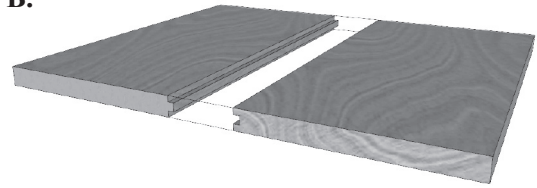
From the joints listed below, choose the two that provide greater strength. Give a reason for your choice.

A.



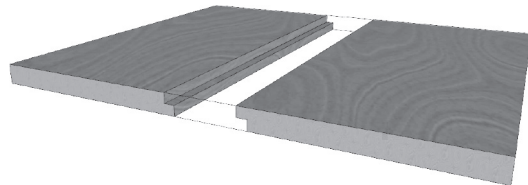
glued butt joint

B.



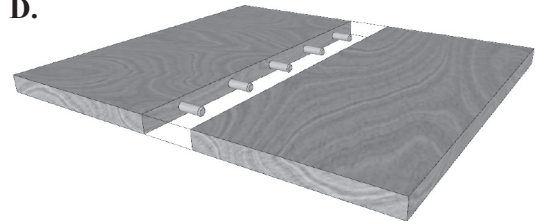
glued tongue and groove joint

C.



glued rebate joint

D.



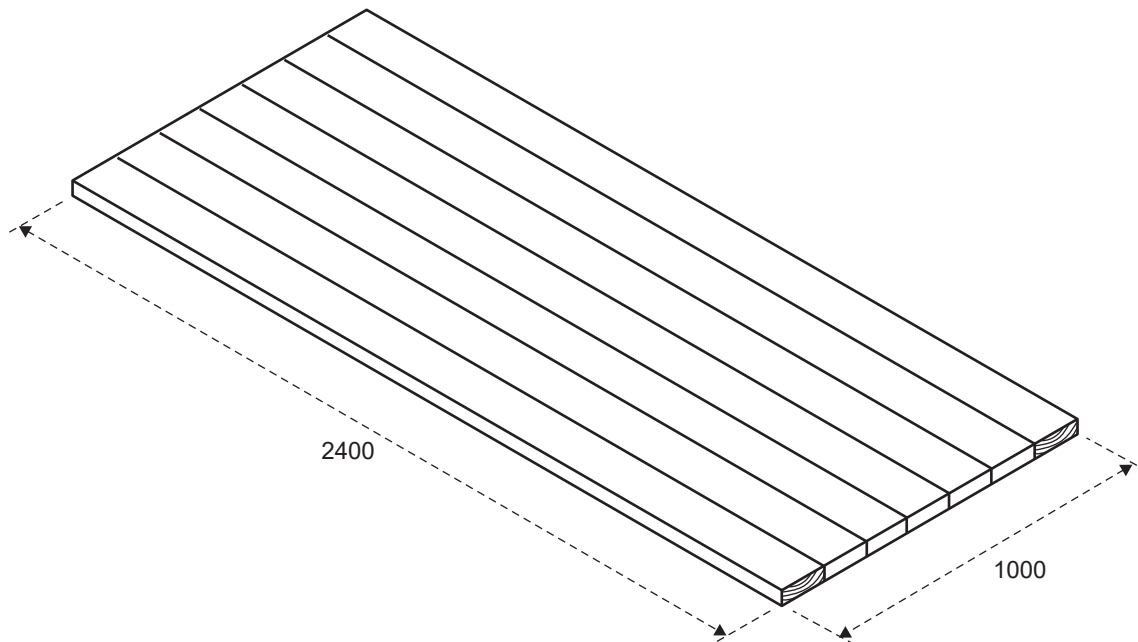
glued dowel joint

Joint 1	Joint 2
Name	Name
Reason	

DO NOT WRITE IN THIS AREA

Question 4 (4 marks)

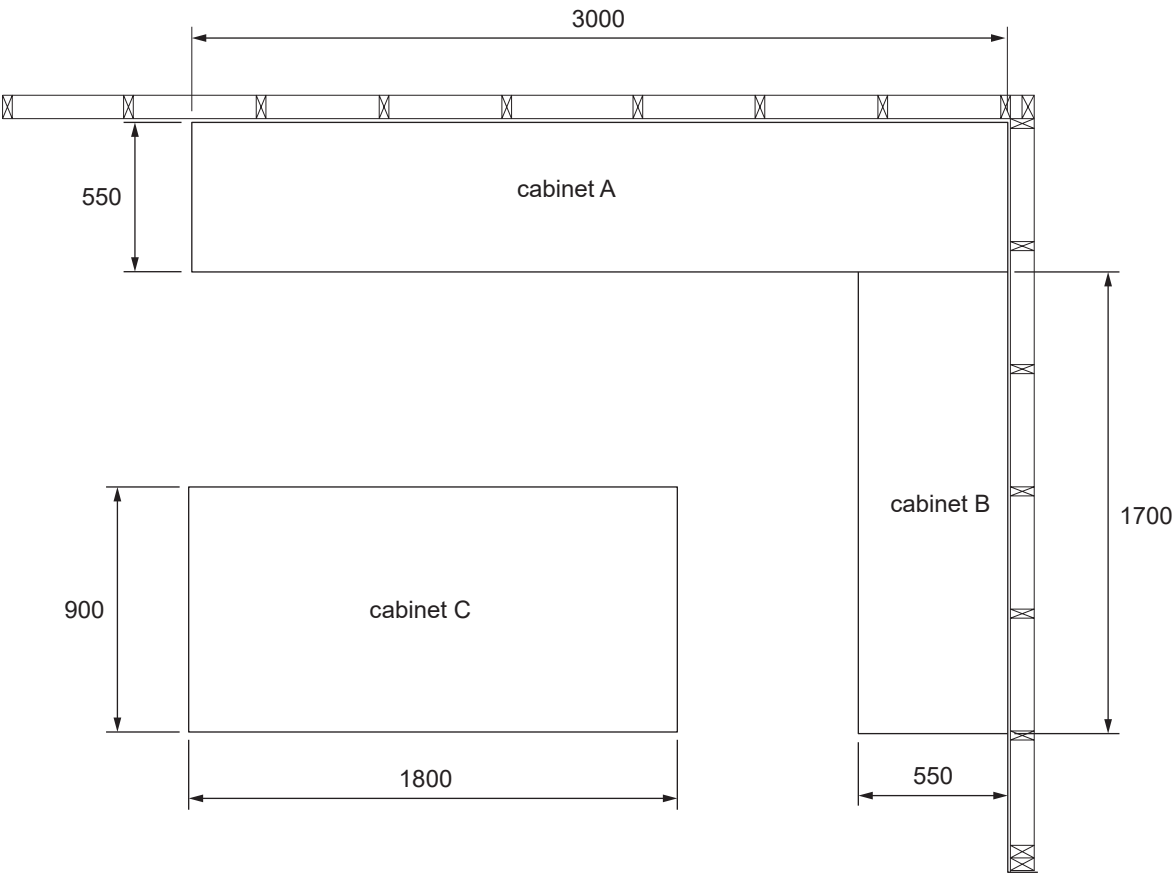
Joi is gluing up the tabletop shown in the diagram below. When clamping, she must position the sash clamps to minimise cupping.



- a. On the diagram above, sketch the correct position of the sash clamps used. Show the upper clamps with a solid line and the lower clamps with a dotted line. 2 marks
- b. Joi has positioned the outer boards with the growth rings as shown in the diagram above. Explain why she has positioned the boards this way. 2 marks

Question 5 (3 marks)

Calculate the areas of floor space covered by cabinetry in the kitchen layout shown in the diagram below. Give your answers in square metres (m²).



cabinet	cabinet footprint (L × W)	area covered (m ²)
cabinet A		
cabinet B		
cabinet C		

DO NOT WRITE IN THIS AREA

Question 6 (6 marks)

Lyn is cutting out for a sink in a kitchen benchtop.





Complete the table below by filling in the order of the tasks she should follow.

Task no.	Description of task
	Drill 10 mm hole in each corner.
8	Collect jigsaw and check quality of blade.
12	Clean up work area.
	Plug jigsaw into power source.
11	Check sink for accuracy of fit.
	Mark out position of sink as per template on the benchtop.
1	Place benchtop on saw stools.
	Cut out shape with jigsaw.
3	Support what will be cut out.
	Put on PPE.
	Secure benchtop to saw stools.
6	Fit cordless drill with 10 mm drill bit.

Question 7 (3 marks)

Pat needs to enlarge some existing 8 mm diameter holes to 11 mm diameter.

Which of the following drill bits should he use? Explain your choice.

<p>wood bit</p> 	<p>machine twist bit</p> 
<p>Forstner drill bit</p> 	<p>spade or flat bit</p> 

Drill bit _____

Explanation _____

Question 8 (2 marks)

Tim is using a spade bit to drill a hole through a chopping board.

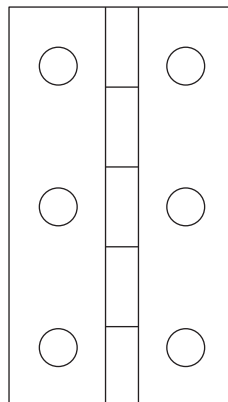
Describe the method Tim must use to minimise chip-out on both sides of the timber.



Question 9 (2 marks)

Tori is fitting brass butt hinges to a bedside cabinet door. After cutting in the hinges, she has to insert the 12 mm × 4G brass slotted countersunk woodscrews.

On the diagram below, show the correct orientation of the slots of the screws.



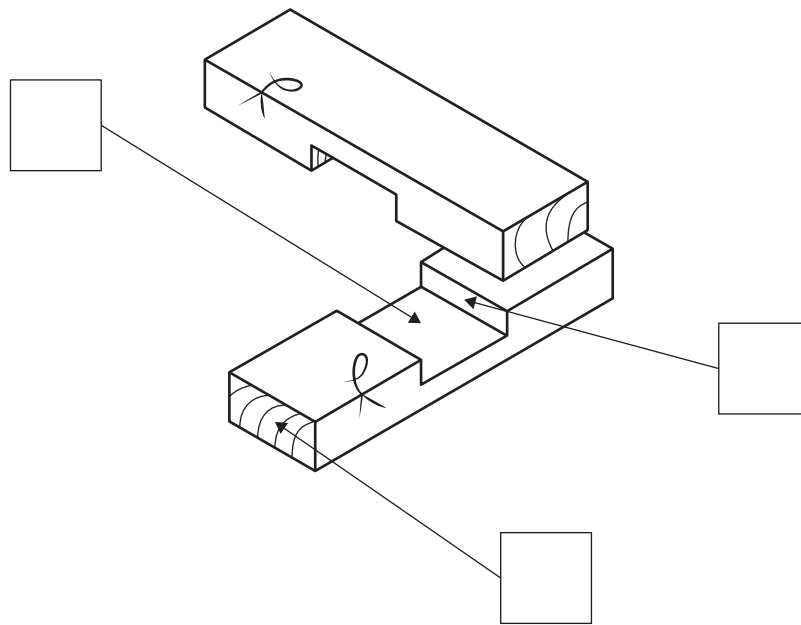
Question 10 (6 marks)

Lou is making the joint shown in the diagram below.

- a. Name the timber joint and label each component on the diagram with the correct letter, **A–C**. 4 marks

timber joint name	
-------------------	--

- A.** end grain
B. shoulder
C. trench



- b. Describe the method used to mark the outside lines for the joint onto all faces of the timber. 2 marks

Question 11 (4 marks)

Bob has designed the chair below.



- a. What type of drawing will show the cabinet-maker the information required to make the chair?

1 mark

- b. Mortise and tenon joints are time-consuming to make.

What similar joint could be made much more quickly?

1 mark

- c. What detail should be applied to the lower end of the legs? Give **one** reason why this detailing is necessary.

2 marks

**END OF SECTION B
TURN OVER**

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 below and the working drawing 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.

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

Specifications

A client requires a sideboard with the following specifications.

Dimensions: 1060 mm × 800 mm × 350 mm

Finish: 30% satin pre-catalysed lacquer spray

Materials:

- carcass – 20 mm Victorian ash
- solid timber – Victorian ash
- door panels, drawer bottoms, back – 3 mm Victorian ash plywood

Carcass:

- outer corners of the carcass to be mitred
- carcass divisions to be biscuit to top and bottom panels
- rebate for carcass back to be 13 mm wide × 3 mm deep

Undercarriage:

- construction to use loose tenon and biscuit joinery
- front, back and side rails to sit flush with the top and the face of the leg

Doors:

- all solid timber door components from 40 mm × 20 mm Victorian ash
- doors to be constructed using dowel joinery
- doors to have 2 mm gaps all round
- groove for door panel to be 10 mm × 3 mm in the centre of thickness
- two 94° narrow frame mini concealed hinges
- centre of hinge to be set 70 mm down from the top of the door and 70 mm up from the bottom of the door

Drawers:

- drawer sides and back to be 18 mm thick
- drawer fronts to be flush with the face of the adjoining door frame
- drawer fronts to have 2 mm gaps all round
- lapped dovetail drawer construction for the drawer front and sides
- drawer back to be housed into drawer sides 6 mm deep and 10 mm from the back end

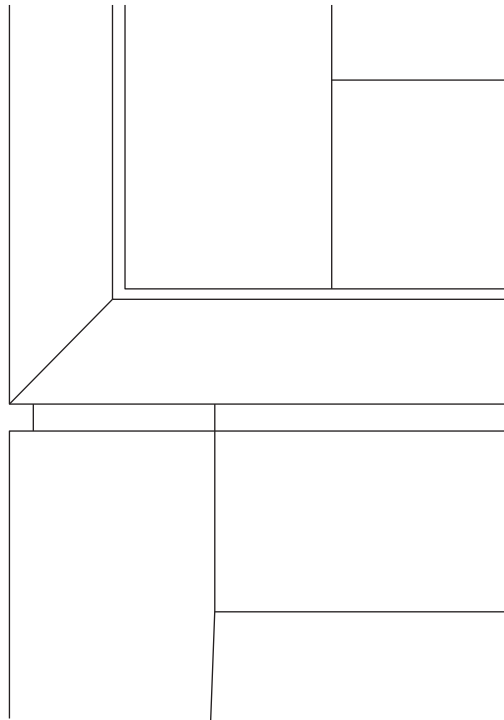
Question 1 (5 marks)

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
Carcase							
1	top	1	1060	350	20	mitre joint	Vic ash
2	bottom	1		350	20	mitre joint	Vic ash
3	end	2	340	350	20	mitre joint	Vic ash
4	division	2	300	325	20		Vic ash
5	front rail	3	315	40	20		Vic ash
6	back panel	1	1048	328	3		
Undercarriage							
7	leg	4	460	40	40	tapered	jarrah
8	front rail	1		40	20		jarrah
9	back rail	1	980	40	20		jarrah
10	side rail	2	270	40	20		jarrah
11	stretcher rail	2	310	40	20		Vic ash
12	fixing cleats	2	310	40	20	notch out for legs	Vic ash
Door							
13	door stile	4	296	40	20	groove for ply	Vic ash
14	door top rail	2	270	40	20	groove for ply	Vic ash
15	door bottom rail	2	270	40	20	groove for ply	Vic ash
16	door panel	2	236	290	3		Vic ash ply
Drawer box							
17	drawer front	3	312	97	20		Vic ash
18	drawer back	3	294	58	18		Vic ash
19	drawer side	6	331	77		groove for ply	Vic ash
20	drawer bottom	3	300	335	3		Vic ash ply
21		6	287	20	20		Vic ash

Question 2 (4 marks)

The diagram below shows the detail of the shadow line between the undercarriage and the carcase.



- a. A shadow line has an important aesthetic role.

Give **one** other reason for including this feature in furniture construction.

1 mark

- b. List the tools used, and describe the process, to make the 5 mm × 5 mm shadow line around the top of the undercarriage.

3 marks

Tools _____

Process _____

Question 3 (2 marks)

The top, sides and base of the carcass are mitred together.

- a. Describe the process used to produce the mitre joint. 1 mark

- b. What is the benefit of using mitres when making furniture products? 1 mark

DO NOT WRITE IN THIS AREA

Question 4 (8 marks)

The tapered section of the undercarriage legs needs to be created. The timber for the legs is square dressed and cut to size.

The following tools and equipment can be used:

- impact driver
- cordless drill
- cordless trimmer
- jigsaw
- domino machine
- 300 mm and 600 mm ruler
- tape measure
- combination square
- No. 220 block plane
- No. 7 hand plane
- set of chisels and mallet
- marking gauge
- tenon saw
- sanding block and abrasive paper
- PPE

Describe the steps necessary, and name the tools and/or equipment required, to produce the tapered section of the undercarriage legs.

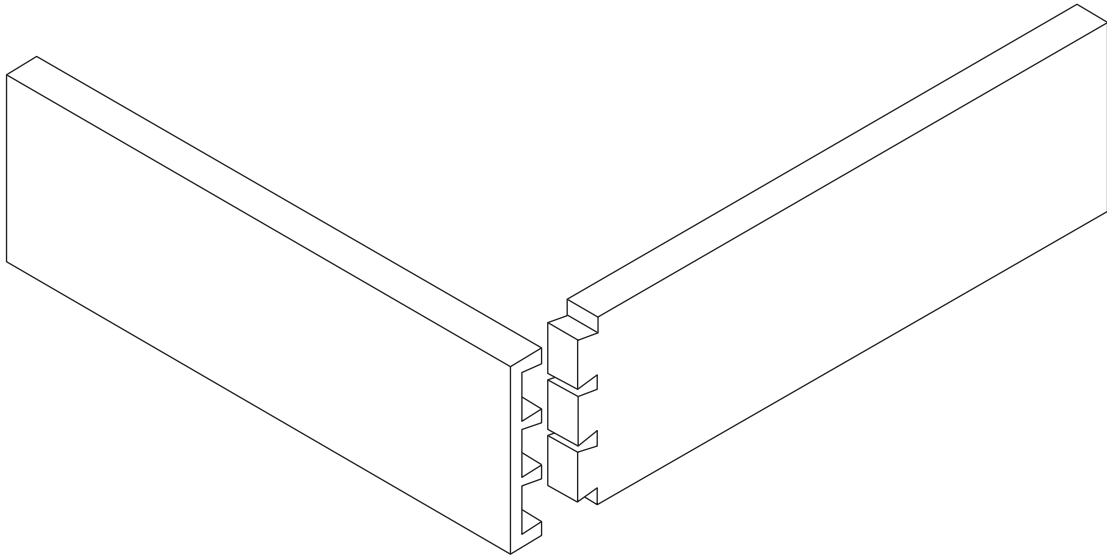
Step no.	Description of step	Tool(s) and/or equipment required
1		
2		
3		
4		

Question 5 (2 marks)

- a. The grain direction is important when positioning the solid timber drawer sides.

Sketch the correct grain direction on the drawer side shown in the diagram below.

1 mark



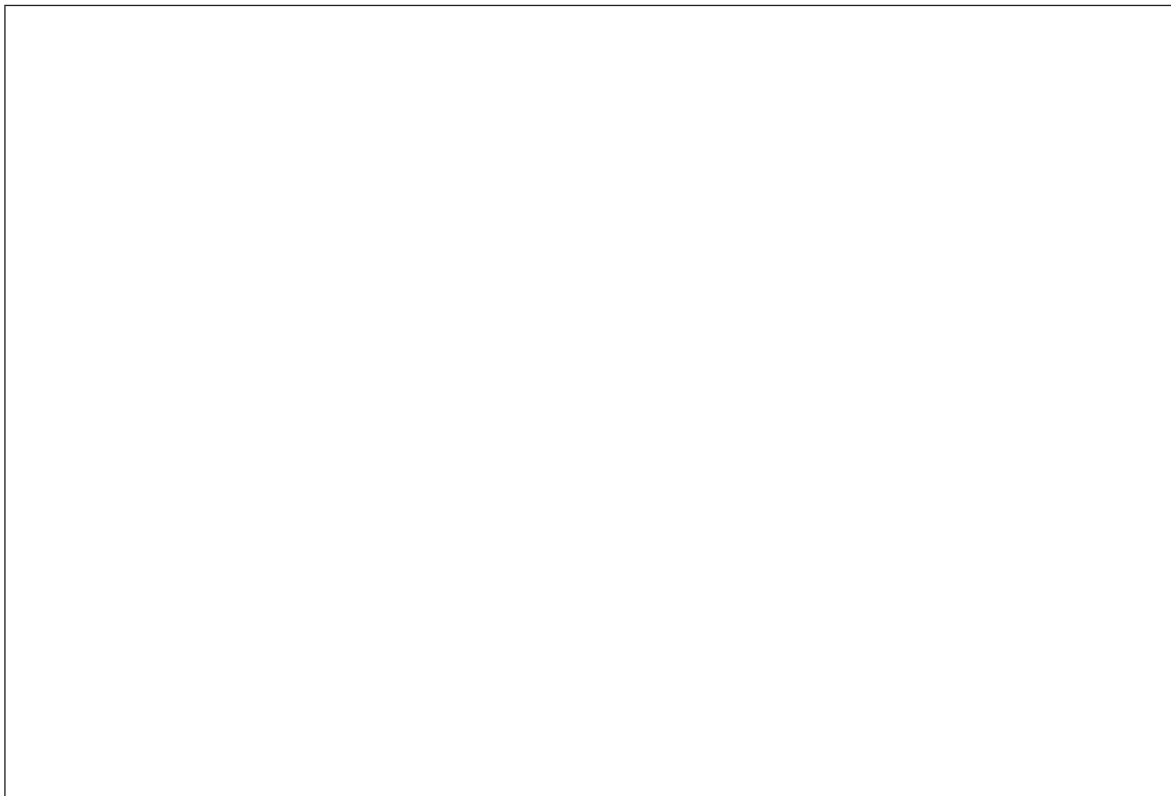
- b. Explain why the grain direction is important when making the timber drawers.

1 mark

Question 6 (2 marks)

The grooves for the plywood drawer bottoms have to be run using a router.

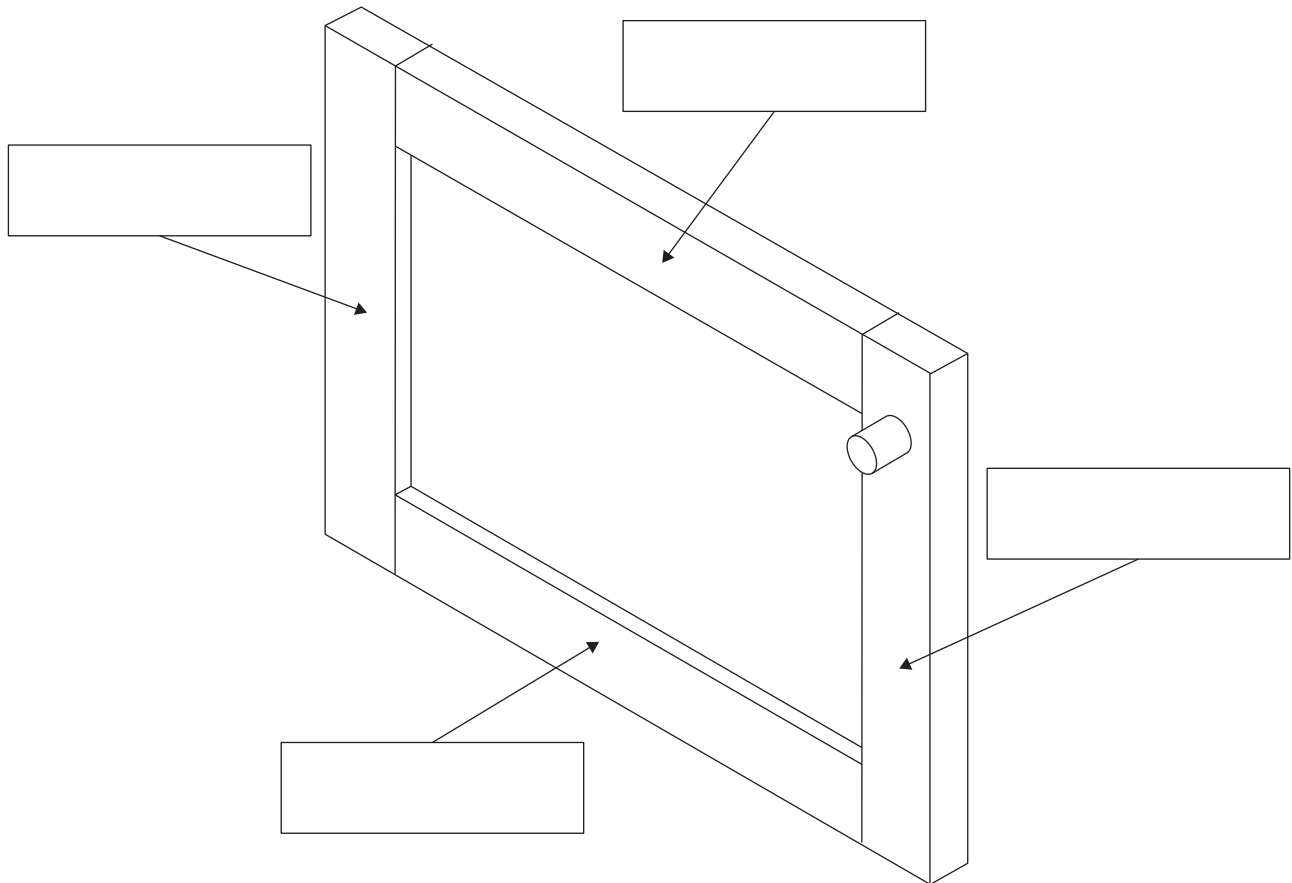
In the space below, sketch the router cutter that you will use. Include dimensions in your sketch.



Question 7 (4 marks)

Label the components (**A.–D.**) on the diagram of the frame and panel door shown in the diagram below.

- A.** top rail
- B.** hinging stile
- C.** locking stile
- D.** bottom rail



Question 8 (4 marks)

The rails and stiles of the doors will be assembled using dowel joints.

Name one other joint that can be used and compare it with the dowel joint.

	Advantages	Disadvantages
dowel joint		
other joint name _____		

Question 9 (3 marks)

- a. What is the industry standard range when choosing the correct dowel size for a dowel joint? 2 marks

- b. There are 40 mm × 6 mm, 50 mm × 10 mm, and 65 mm × 19 mm pre-cut dowels in stock.

Which size should be used to assemble the door?

1 mark

Question 10 (3 marks)

Complete the table below by filling in the steps required for gluing, assembling and clamping the frame and panel door.

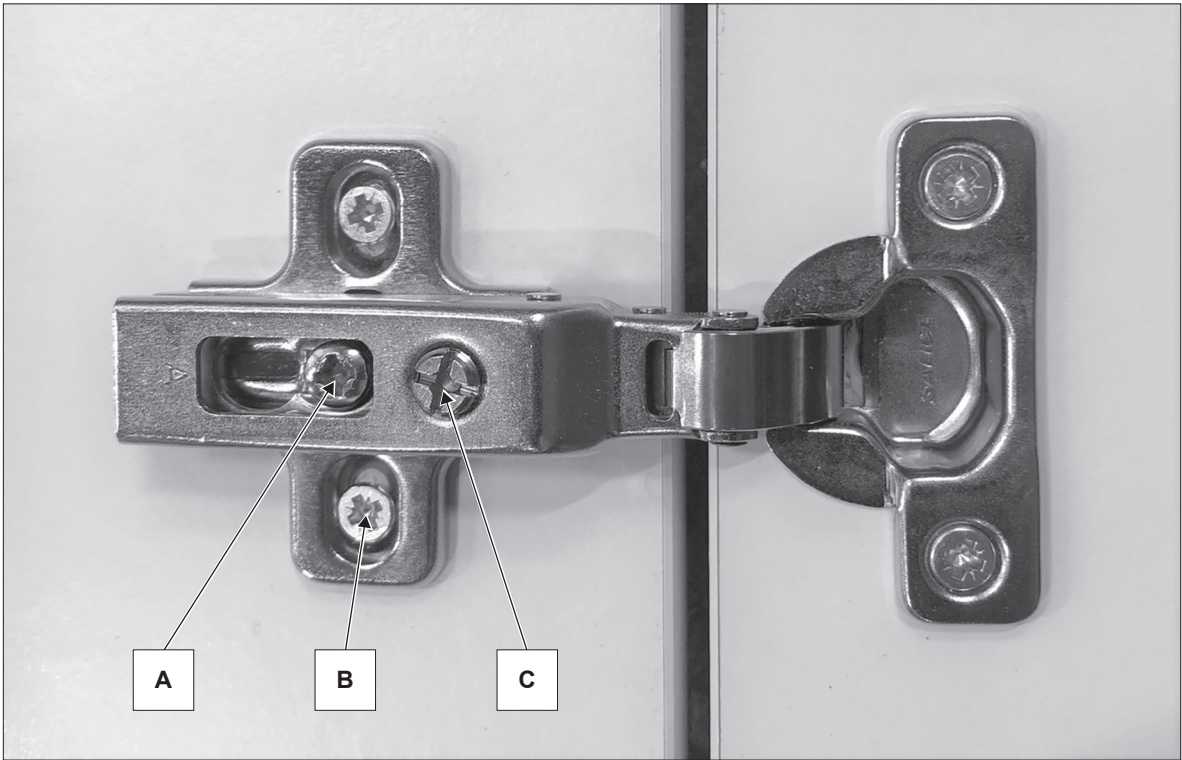
Step no.	Description of step
1	<i>dry assemble frame and panel</i>
2	<i>adjust sash clamps and clamping blocks</i>
3	<i>apply glue to dowel joints</i>
4	
5	<i>assemble frame</i>
6	
7	<i>tighten sash clamps</i>
8	<i>check for twist</i>
9	
10	<i>remove excess glue</i>

DO NOT WRITE IN THIS AREA

Question 11 (3 marks)

The sideboard doors need 94° narrow frame mini concealed hinges.

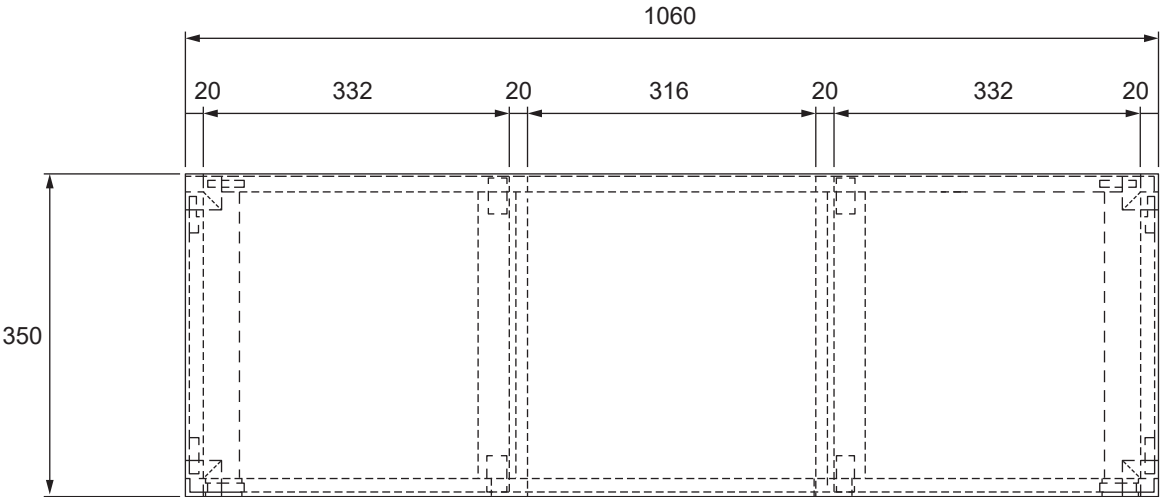
Describe the three main adjustments that can be made by turning the appropriate screw.



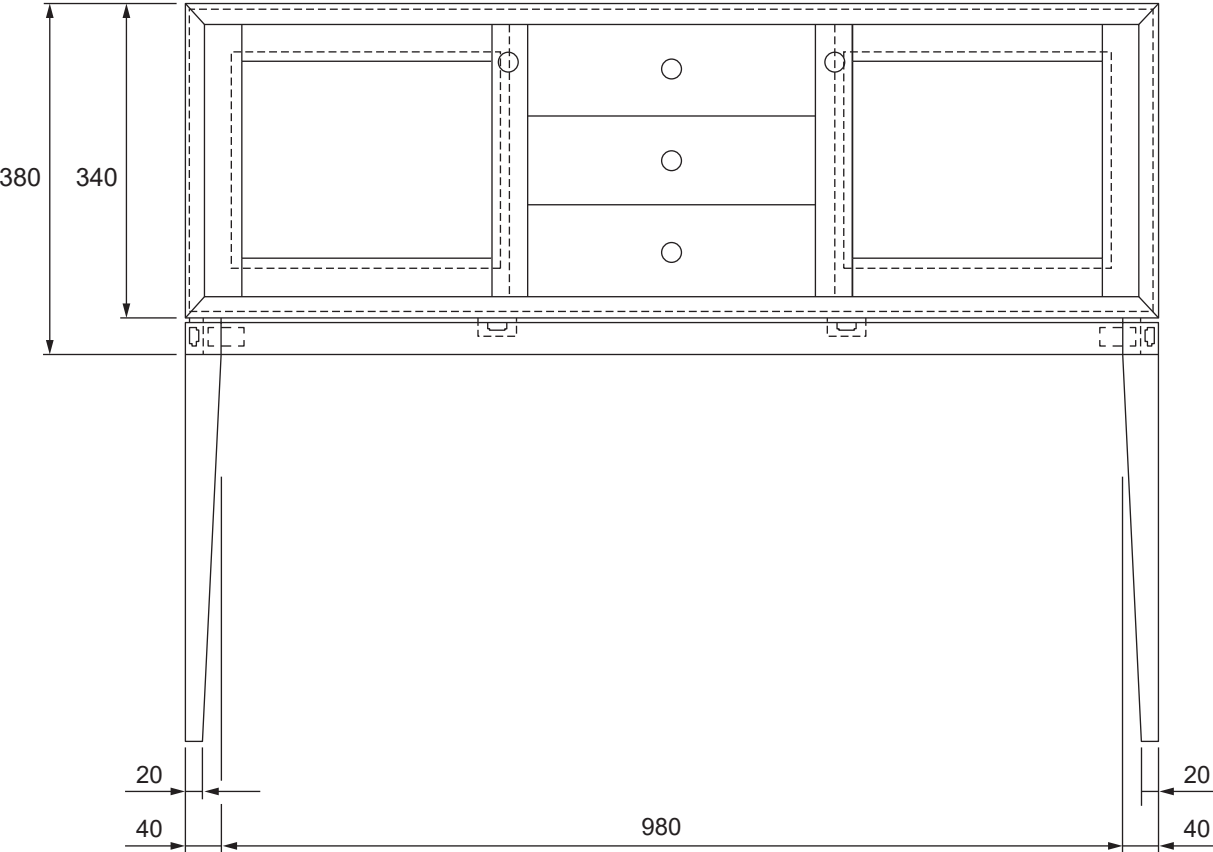
Adjustment screw A
Description of adjustment
Adjustment screw B
Description of adjustment
Adjustment screw C
Description of adjustment

Insert for Section C

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

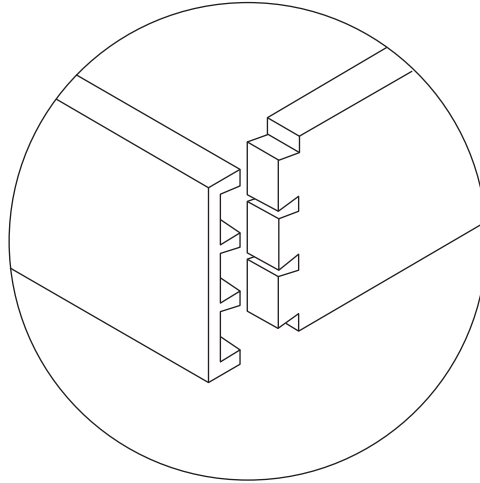


TOP VIEW

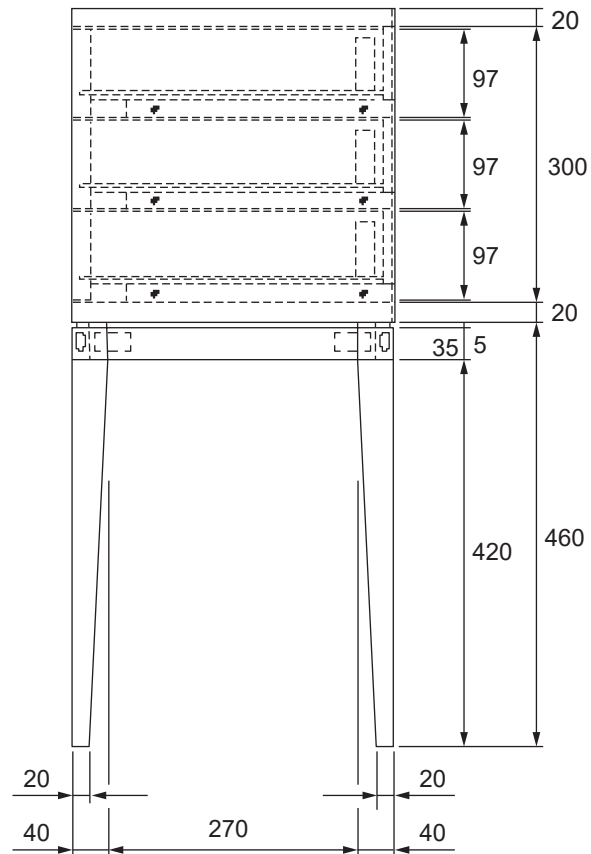


FRONT VIEW

address:
PH:
email:



LAPPED DOVETAIL



SIDE VIEW

FAX	CLIENT	PRODUCT Sideboard	DRAWING		
			DATE	No IN SET 1	THIS DRAWING 1
			DRAWN BY		
			DESIGNED	DRAWING REFERENCE	
			SCALE 1:7		

END OF INSERT