

**Victorian Certificate of Education
2020**

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER Letter

VCE VET FURNISHING

Written examination

Wednesday 18 November 2020

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	9	9	40
C	13	13	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 21 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 air guns should be used to fasten 12 mm × 6 mm moulding to a door?

- A. C1 brad gun
- B. headless pin gun
- C. clipped head nail gun
- D. wide crown staple gun

Question 2

Which one of the following joints can be made with a biscuit jointer?

- A. leg and rail joints
- B. lock mitre joints
- C. widening joints
- D. dowel joints

Question 3

What must be done before starting to cut a piece of timber with a jigsaw?

- A. Start the jigsaw off the timber.
- B. Place the jigsaw firmly on the timber without cutting.
- C. Place the jigsaw on the bench until full speed is reached.
- D. Place the jigsaw with the blade firmly against the timber.

Question 4

Which one of the following is the correct tool to use when cutting a hole with a 115 mm diameter hole saw?

- A. impact driver
- B. the fastest tool close by
- C. lightweight battery drill
- D. high-power, low-speed corded drill

Question 5

What is the shank diameter for trimmer router bits?

- A. 4 mm
- B. 6 mm
- C. 8 mm
- D. 9 mm

Question 6

Which one of the following tools should be used to make a 6 mm pencil round on a bar stool seat?

- A. orbital sander
- B. belt sander
- C. trimmer
- D. router

Question 7

Which one of the following tools is used to mark a line parallel to the edge of a piece of timber?

- A. marking gauge
- B. scratch gauge
- C. sliding bevel
- D. try square

Question 8

Which one of the following planes is used to fit large drawer sides?

- A. block plane
- B. electric plane
- C. smoothing plane
- D. combination plane

Question 9

What is the appropriate height of a work bench for assembling kitchen cabinets?

- A. the distance from the floor to one's elbow
- B. equal to the height of the cabinets
- C. 900 mm high
- D. 450 mm high

Question 10

Julie notices a loose knot in the door stile that she is assembling.

Julie should

- A. stop work and repair the door stile with a contrasting timber plug.
- B. throw the door stile in the landfill bin.
- C. use the door stile and putty up later.
- D. put the door stile aside for re-use.

Question 11

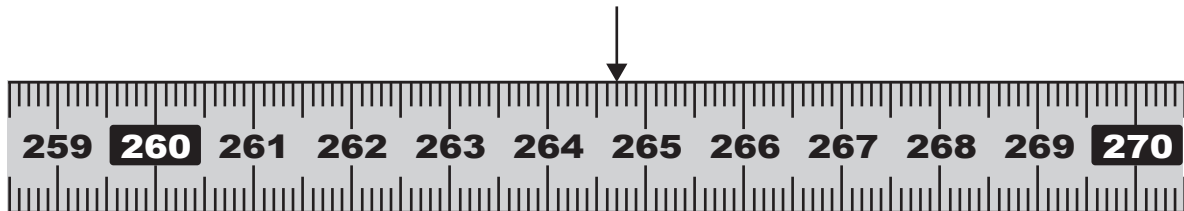
Which part of a piece of furniture is the carcass?

- A. the main body
- B. the unseen part
- C. the shelf under the drawers
- D. the locking mechanism for the drawers

Question 12

Cams and pins are used for which type of furniture?

- A. low-cost
- B. imported
- C. solid timber
- D. knockdown

Question 13

What is the measurement shown on the tape measure?

- A. 2647 mm
- B. 2763 mm
- C. 26.47 m
- D. 2647 m

Question 14

Where would a single dovetail joint be expected to be used in the construction of a bedside cabinet with a timber top?

- A. as a rail to fix the top
- B. as part of the side panel
- C. to join the bottom shelf
- D. as part of the doorframe

Question 15

Which one of the following documents explains how to install a circular saw blade?

- A. a tax invoice
- B. user instructions
- C. the expiry label
- D. safety data sheets (SDS)

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Question 16

A table has an overhang of 20 mm all around.

Which one of the following best describes the statement above?

- A. The legs are 20 mm wider than the width of the rails.
- B. The legs are 20 mm wider than the thickness of the rails.
- C. The tabletop extends 20 mm from the frame on every side.
- D. The tabletop extends 20 mm from the frame on the front and two sides.

Question 17

The most appropriate drill bit to use when constructing joints for a bedside cabinet doorframe is the

- A. auger bit.
- B. spade bit.
- C. dowel bit.
- D. masonry bit.

Question 18

Which one of the following tools is used before drilling into the end grain of timber?

- A. string line
- B. handplane
- C. combination square
- D. centre punch

Question 19

Which one of the following is the most appropriate joint to use when joining timber boards together for a tabletop?

- A. rebate joint
- B. biscuit joint
- C. dovetail joint
- D. mortise and tenon joint

Question 20

Which one of the following tools is used to measure the width of the spindle on a chair leg?

- A. 300 mm ruler
- B. vernier calipers
- C. tape measure
- D. laser measurement sensor

SECTION B – Short-answer questions

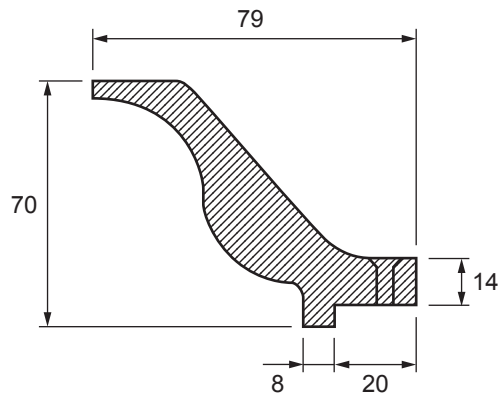
Instructions for Section B

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

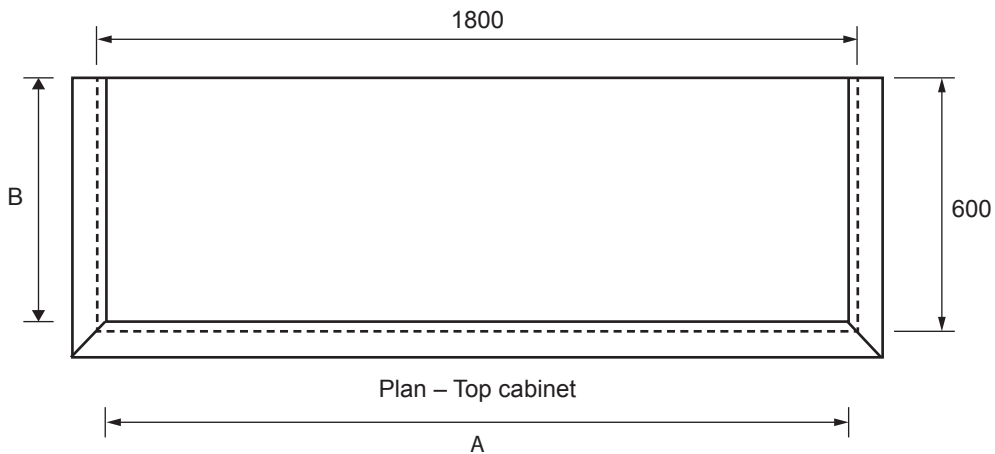
Unless otherwise indicated, the diagrams in this book are **not** drawn to scale.

Question 1 (4 marks)

A tall cupboard requires crown moulding at the top (Section – Crown moulding). The cupboard is 1800 mm long by 600 mm deep. The moulding sits on a base of 20 mm, which is screwed to the top cabinet (Plan – Top cabinet).



Section – Crown moulding



Plan – Top cabinet

Figure 1

What are the lengths of the short points of the mitre cuts of the front piece (A) and one side piece (B)? Show your working for each.

Front piece (A) _____

Side piece (B) _____

Question 2 (2 marks)

A project requires 15 kitchens to be constructed with 20 drawers in each kitchen. A worker can make 12 drawers a day.

How many days will it take one worker to make all the drawers for 15 kitchens? Show your working.

Question 3 (6 marks)

Figure 2 shows a bedside cabinet with an open door.

The following joints will be used to construct the bedside cabinet:

- | | | |
|-------------------|----------------------------|-------------------|
| 1. mitre joint | 2. mortise and tenon joint | 3. housing joint |
| 4. dovetail joint | 5. dowel joint | 6. widening joint |

Indicate on Figure 2 where each joint will be used. Use the number provided for each joint.

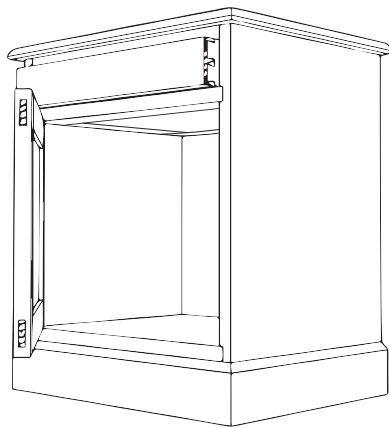


Figure 2

Question 4 (3 marks)

An outdoor table is to be made from plantation blue gum.

What adhesive should be used to glue the leg and rail joints? Explain why you chose this adhesive.

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Question 5 (8 marks)

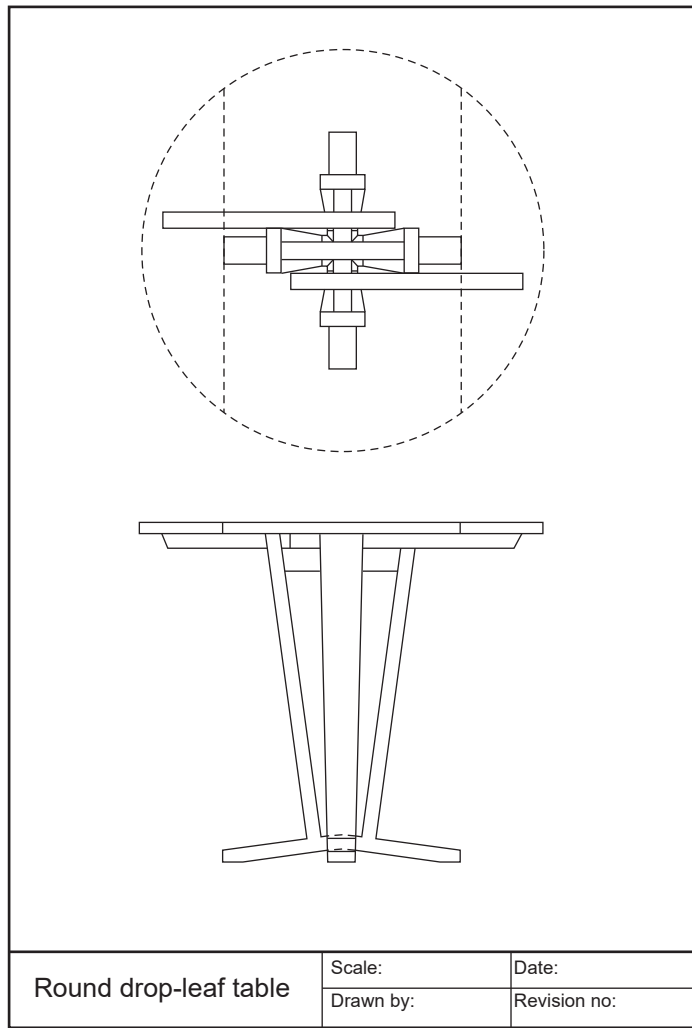
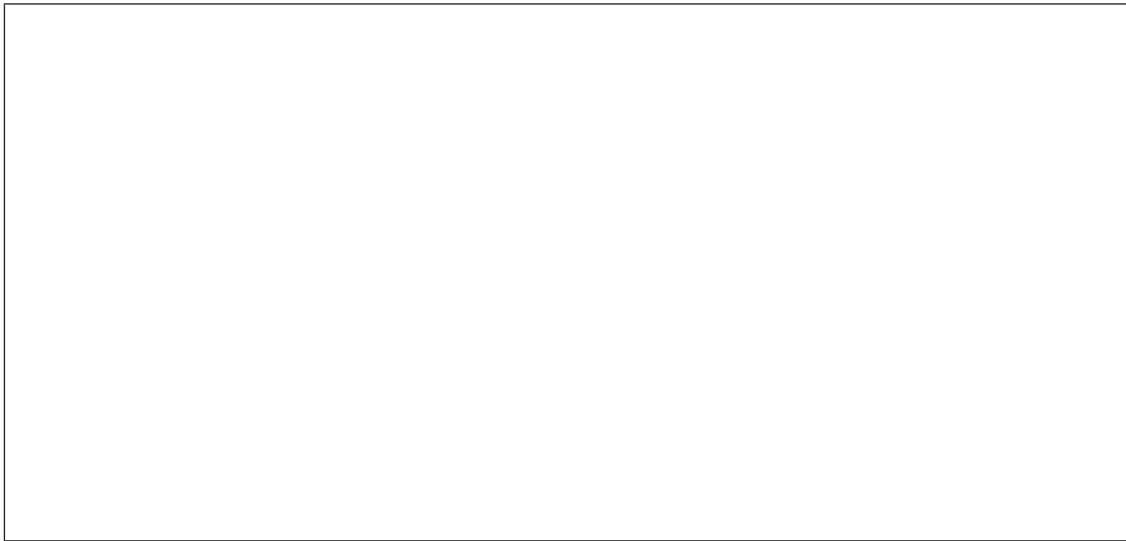


Figure 3

- a. What is an appropriate hinge for the round drop-leaf table shown in Figure 3? Explain why. 2 marks

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- b. In the space below, sketch the sub-frame rail for the round drop-leaf table shown in Figure 3, showing the cross halving, loose tenons and the cut-outs for the top supports. 4 marks



- c. The round drop-leaf table is ready for polishing. Before the table is polished with a new brand of polish, information about the product's application, clean-up and health hazards is required.

What documentation would have this information and how would this documentation be obtained?

2 marks

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Question 6 (3 marks)

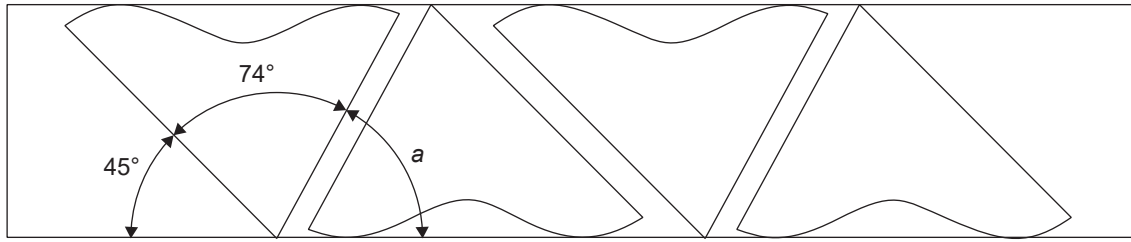


Figure 4

- a. What angle, a , should a drop saw be set to when cutting the corner blocks shown in Figure 4? Show your working. 2 marks

- b. What is **one** method for ensuring the angle has been set accurately? 1 mark


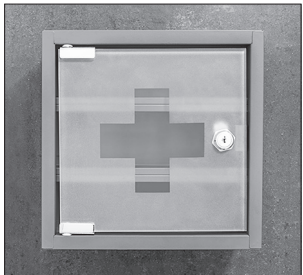


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Question 7 (8 marks)

Shown below are four types of hinges, numbered 1 to 4.

Hinge number	1	2	3	4
Hinge				

Match the hinges 1–4 to the cabinets shown in the table below by writing the number and the name of the hinge in the spaces provided.

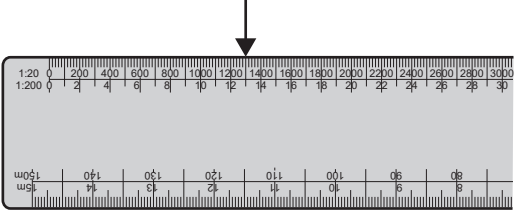
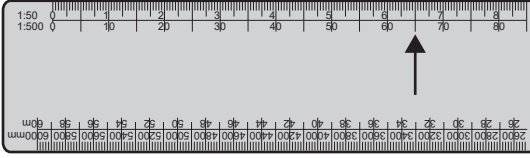
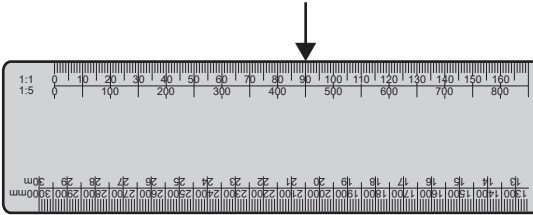

Cabinet	Hinge number	Hinge name
		
		
		
		

Source (second from top): photodonato/Shutterstock.com

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Question 8 (4 marks)

Provide the scale and measurement for each of images 1, 2, 3 and 4 shown below.

<p>1.</p>  <p>Scale _____</p> <p>Measurement _____</p>	<p>2.</p>  <p>Scale _____</p> <p>Measurement _____</p>
<p>3.</p>  <p>Scale _____</p> <p>Measurement _____</p>	<p>4.</p>  <p>Scale _____</p> <p>Measurement _____</p>

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Question 9 (2 marks)

A round table with a diameter of 1200 mm requires an iron-on timber edging around its circumference.

What is the length of the timber edging required for a table of this size, in millimetres? Show your working.
Use the formula $C = 2\pi r$, where $\pi = 3.14$

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**END OF SECTION B
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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 (16 marks)

The job plan on page 15 progresses from materials preparation to hallway cabinet construction and then to finishing.

Use the following list of steps, tools/equipment required and personal protective equipment (PPE) to fill in the missing information in the bold boxes of the job plan. Use **only the numbers** in the list.

Project list	
Number	Steps, tools/equipment required, PPE
1	pencil, 300 mm steel rule, combination square
2	Cut shelving to length.
3	eye protection, breathing protection, PPE
4	Machine moulding edge to top.
5	Fit doors.
6	drill, cordless screwdriver, tape measure, hand tools
7	hearing and eye protection, dust control
8	mitre saw, sliding bevel, combination square, hand tools, clamps
9	Cut top and shelf to length and clean edges.
10	Select timber. Dress and cut to size.
11	clamps, glue, rags
12	sprayer, sandpaper, clean-up equipment
13	packaging equipment
14	Machine door components and front skirting.
15	tape measure, docking saw, rip saw, jointer and thicknesser
16	Apply two coats of satin lacquer finish.

Job plan			
Section	Step	Tools/equipment required	Personal protective equipment (PPE) for task
preparation			hearing and eye protection, dust control
	Glue up side panels and backboard to top and carcass top.		
		router, spindle moulder	hearing and eye protection, dust control
	Send timber to CNC for shaping of moulding, corbels and shelf supports.		
construction	Mark out carcass components.	pencil, 300 mm steel rule, combination square, tape measure	
	Cut carcass components.	table saw, mitre saw	hearing and eye protection, dust control
	Assemble carcass, including facing, corbels and skirting.	drill, cordless screwdriver, tape measure, glue, rags	
	Mark out door rails and stiles.	pencil, 300 mm steel rule, combination square	
	Cut door rails and make door joints.		hearing and eye protection, dust control
	Assemble doors.	clamps, glue, rags	
	Mark out top and shelf length.	pencil, 300 mm rule, combination square marking gauge	
		table saw, handsaw, power saw, handplane, sander	
		shaper, router	
	Mark and cut backing board to top.	pencil, 300 mm steel rule, combination square, pattern, jigsaw, bandsaw	
	Assemble backboard and shelf components, and fix top to backboard.	drill, cordless screwdriver, tape measure, glue, rags	hearing and eye protection
finishing	Sand all parts ready for finishing.	sanding block and abrasive paper, sander	hearing and eye protection, dust control

Question 2 (2 marks)

In the space provided below, sketch a lapped dovetail joint that would be used in a drawer of the hallway cabinet and give one reason why this joint would be used.

Sketch
Reason

Question 3 (1 mark)

What is the overall height of the spindle that will be seen when the project is completed?

Question 4 (1 mark)

What is the overall width of the hallway cabinet?

Question 5 (1 mark)

The rough sawn timber is 150 mm × 25 mm.

How many lineal metres of timber are required for the top of the hallway cabinet? Give your answer correct to the nearest 300 mm.

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Question 6 (2 marks)

What are corbels and where are they located on the hallway cabinet?

Question 7 (1 mark)

What portable power tool would be used to create a 20 mm bullnose edge on the top of the hallway cabinet?

Question 8 (2 marks)

What are **two** common causes of a twist or wind in a widening panel when gluing?

Question 9 (1 mark)

What action must be taken when a power cord tag shows that the test date has passed?

Question 10 (2 marks)

State why the router bit shown above should not be used. Explain how the router bit can be fixed.

Question 11 (1 mark)

What is the overall height of the doors, allowing a gap of 2 mm?

Question 12 (2 marks)

What should the cabinet-maker do to confirm the client is satisfied with the proposed working drawing and specifications?

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Question 13 (8 marks)

Complete the table below and on page 21 by filling in the missing information in the bold boxes using the working drawing and specifications.

Item no.	Part of product	No. of pieces	Length	Width	Thickness	Notes	Total lineal metres	Cost per lineal metre (\$)	Total	Remarks
1	plinth	1	2100	105	20		2.1	10.13	21.27	
2	sides	2	955	345	20	4 @ 955 × 172.5 × 20		13.50	51.57	
3	front pelmet	2	955	75	20		1.91	6.75	12.89	
4	corbels	2	265	75	55	4 @ 265 × 75 × 27.5	1.06	10.26	10.88	
5	bottom shelf	1	1030	345	20	2 @ 1030 × 172.5 × 20	2.06	13.50	27.81	notch out for sides
6	middle shelf	1	1030		20	2 @ 1030 × 162.5 × 20	2.06	13.50	27.81	
7	top	1	1110	435	20	3 @ 1110 × 145 × 20	3.33	10.13	33.73	bullnose on front and edges
8	backboard	1	1070	430	20	3 @ 1070 × 143.5 × 20	3.21	10.13	32.52	shape curve on top
9	top curved decoration	1	1070	140	15			10.13	10.84	cut and shape
10	top shelf	1	1070	130	20		1.07	10.13	10.84	
11	top spindles	2		30	30	1 @ 251 × 70 × 30	0.251	10.26	2.58	turned on lathe
12	back panels	1		1030	20	5 @ 955 × 206 × 20	4.775	13.50	64.46	panels butted together and into sides
13	drawer rail	1	1030	145	20		1.03	10.13	10.43	notch out for sides
14	drawer runner	2	200	80	20		0.4	6.75	2.70	
15	drawer guide	2	325	55	20		0.65	6.75	4.39	
16	drawer front	1	916	98	20		0.916	6.75	6.18	rebate for bottom
17	drawer moulding	1	916	30	14		0.916	3.38	3.10	7 mm radius

Item no.	Part of product	No. of pieces	Length	Width	Thickness	Notes	Total lineal metres	Cost per lineal metre (\$)	Total	Remarks
18	drawer stops	2	75	16	20		0.15	3.38	0.51	
19	drawer sides	2	349	92	14		0.67	6.75	4.52	rebate for bottom
20	drawer back	1	888	76	14		0.888	6.75	5.99	
21	drawer bottom	2	420	341	6	6 @ 420 × 113.5 × 6	2.52		25.53	
22	drawer muntin	1	335	100	16		0.335	6.75	2.26	rebate on two sides
23	door top and bottom rail	4	289	84	20		1.156	6.75	7.80	
24	door stiles	4	732	84	20		2.936	6.75	19.82	
25	door panel	2	594	317	6	6 @ 594 × 105.5 × 6	3.564		36.10	
26	door panel moulding	2	1822	14	8	1 @ 1900 × 40 × 8	1.9	3.38	6.42	
27	door front moulding	1		14	10		0.732	3.38	2.47	7 mm radius

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Insert for Section C

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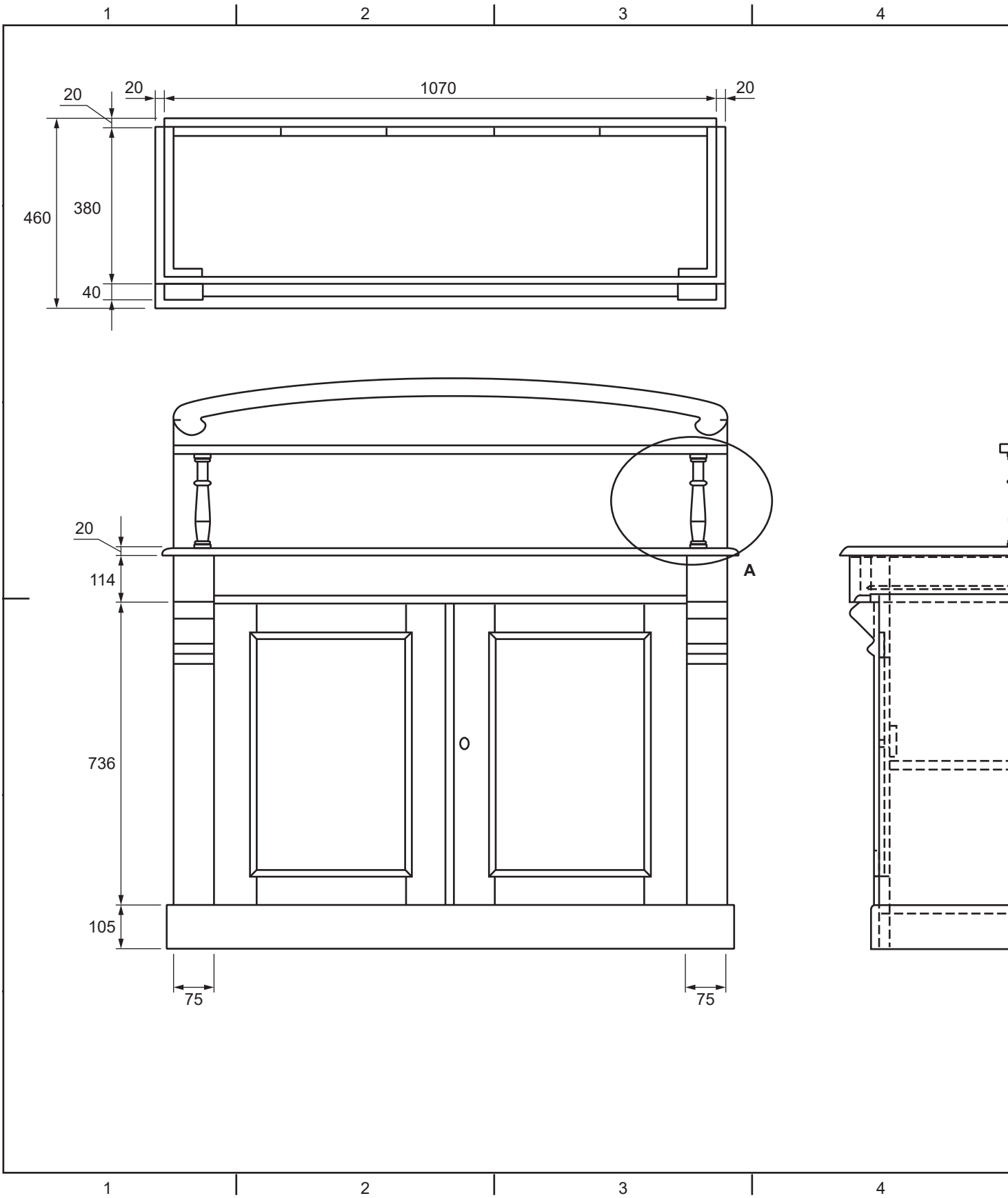
Read the following specifications together with the working drawing on pages 2 and 3 of this insert.

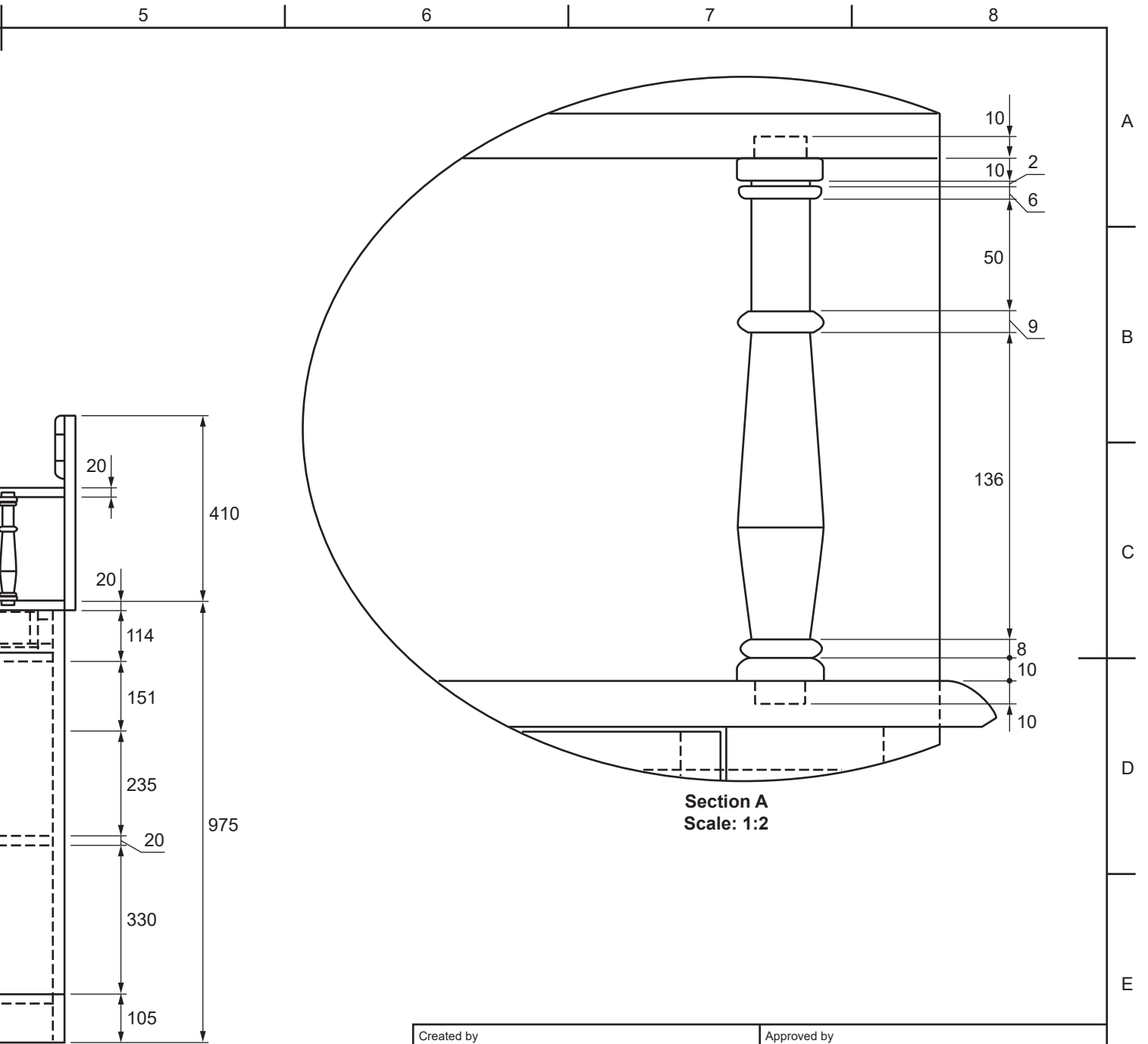
Specifications

A client requires a hallway cabinet with the following specifications:

- overall height of the hallway cabinet 1385 mm
- overall depth of the hallway cabinet 460 mm
- overall width of the hallway cabinet 1100 mm
- doors are flush with the front pilaster but not with the corbels
- two 70 mm butt hinges on each door
- all timber to be solid Victorian ash
- all timber 20 mm thick unless otherwise noted
- one adjustable shelf
- back panels 20 mm thick solid timber
- back panels biscuit together and attached to the sides via biscuits
- top 20 mm overhang on front and sides
- top 20 mm bullnose edge on front and sides
- backboard fixed to the back of the cabinet top 20 mm down
- carcass biscuit construction
- all widening joints to be biscuit joints
- doors domino construction
- door panels 6 mm solid timber
- doors rebated 14 mm × 14 mm in at the front for the panel and moulding
- door panel moulding 6 mm pencil round
- doors have 2 mm gaps
- lapped dovetail drawer construction for the drawer front and sides
- drawer sides to be domino to drawer back
- drawer front 20 mm thick
- drawer sides and back 14 mm thick
- drawer bottoms 6 mm thick in 6 mm deep grooves
- drawer muntin 100 mm × 16 mm
- drawer back is 16 mm less in width than the drawer sides, which allows for the drawer bottom to continue through to the back of the drawer and be attached underneath the drawer back
- drawer and door centre moulding feature 7 mm radius half circle round
- two coats of 30% satin clear lacquer spray

TURN OVER





		Created by SNP	Approved by	
Dept.	Technical reference	Date of approval	Signature	
		Document type Scale: 1:10	Document status	
		Title Hallway cabinet	DWG no. 1 of 1	
		Rev.	Date of issue	Sheet 1/1