MANILLA CENTRAL SCHOOL - ASSESSMENT TASK NOTIFICATION

Stage 5 – 2024 MATHEMATICS

D GOUVOUSSIS/M EAGLES

Task Number: 1
Weight: 25%

Notification Date: Term 1 Week 8 Thursday 21/3/24
Due Date: Term 1 Week 11, Tuesday 09/04/24
Handed to your classroom teacher by 3:20pm

MEASUREMENT ASSIGNMENT

OUTCOMES ASSESSED

MAO-WM-01
develops understanding and fluency in mathematics through exploring and connecting mathematical concepts, choosing, and applying mathematical techniques to solve problems, and communicating their thinking and reasoning coherently and clearly.
MA5-ARE-C-01
solves problems involving the surface area of right prisms and practical problems involving the area of composite shapes and solids.
MA5-VOL-C-01
solves problems involving the volume of composite solids consisting of right prisms and cylinders.

TASK DESCRIPTION

Students are to attempt all questions of the assignment.
There are four sections to the task.
Section 1 - Language
Section 2 - Area
Section 3 – Surface area
Section 4 – Volume
Section 5 – Applications

- Students will need to write all answers and working in the provided spaces.
- Diagrams are to be drawn using a pencil and ruler.
- Full marks will not be given without handwritten working as evidence of mental calculations.
- Complete referencing at the end of each section to indicate any help or support given with the questions.

TASK INSTRUCTIONS

- Three lessons will be specifically dedicated to this task.
- Students are expected to spend some time at home working on their assignment.
- The task should be submitted as a hard copy directly to your class teacher by 3.20pm on Tuesday 09/04/24
- If you require an extension prior the due date, please see Head Teacher Secondary Studies (Miss Nott).

MARKING GUIDELINES

- Marks will be allocated to individual questions as indicated on the test paper.
- Multiple choice will be allocated one mark each.

Task Mark	
Task Rank	
Cumulative Rank	

Teacher's signature: _____ D. Gouvoussis

Teacher's signature: _____ M. Eagles

Head Teacher's signature: _____ A. Nott

Deputy Principal's Signature: _____ R. Ferguson

Stage 5 Mathematics

Assessment Task 1 2024

Question and Answer Booklet

Name _____

Teacher _____

Instructions

- All answers must be completed on the booklet and handed in for marking. If you require extra page/s or make an error, please indicate next to the question and staple to the booklet.
- Students are to complete this assignment independently; it is an assessment of your own understanding.
- You must keep a record of any assistance you seek out or receive for each section.
- Students are encouraged to attempt all questions to the best of their ability.
- Marks allocated are next to each question. Marks are awarded for recording working out. Answers only will not receive full marks unless it is a 1-mark question.

Section 1 – Language

Question 1 (2 marks each)

In your own words, define the following terms. For each definition give a real-world example.

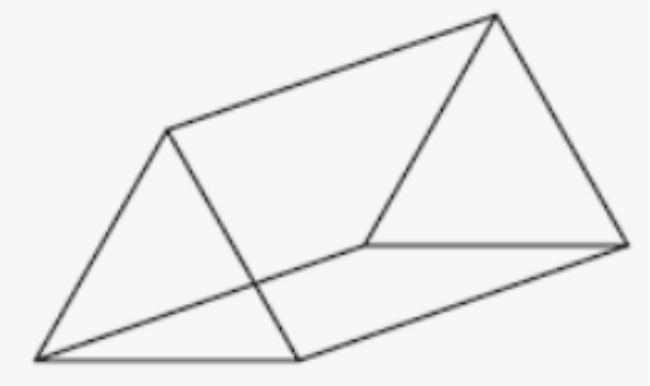
a. Right prism

b. Net

c. Cross section

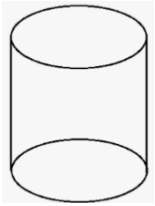
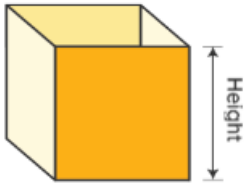
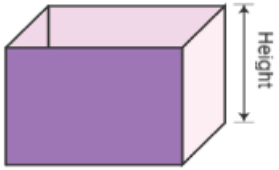
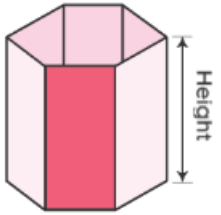
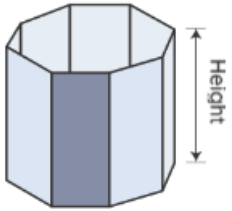
Question 2 (3 marks)

On the triangular prism, label the following: edge, vertex, and base.



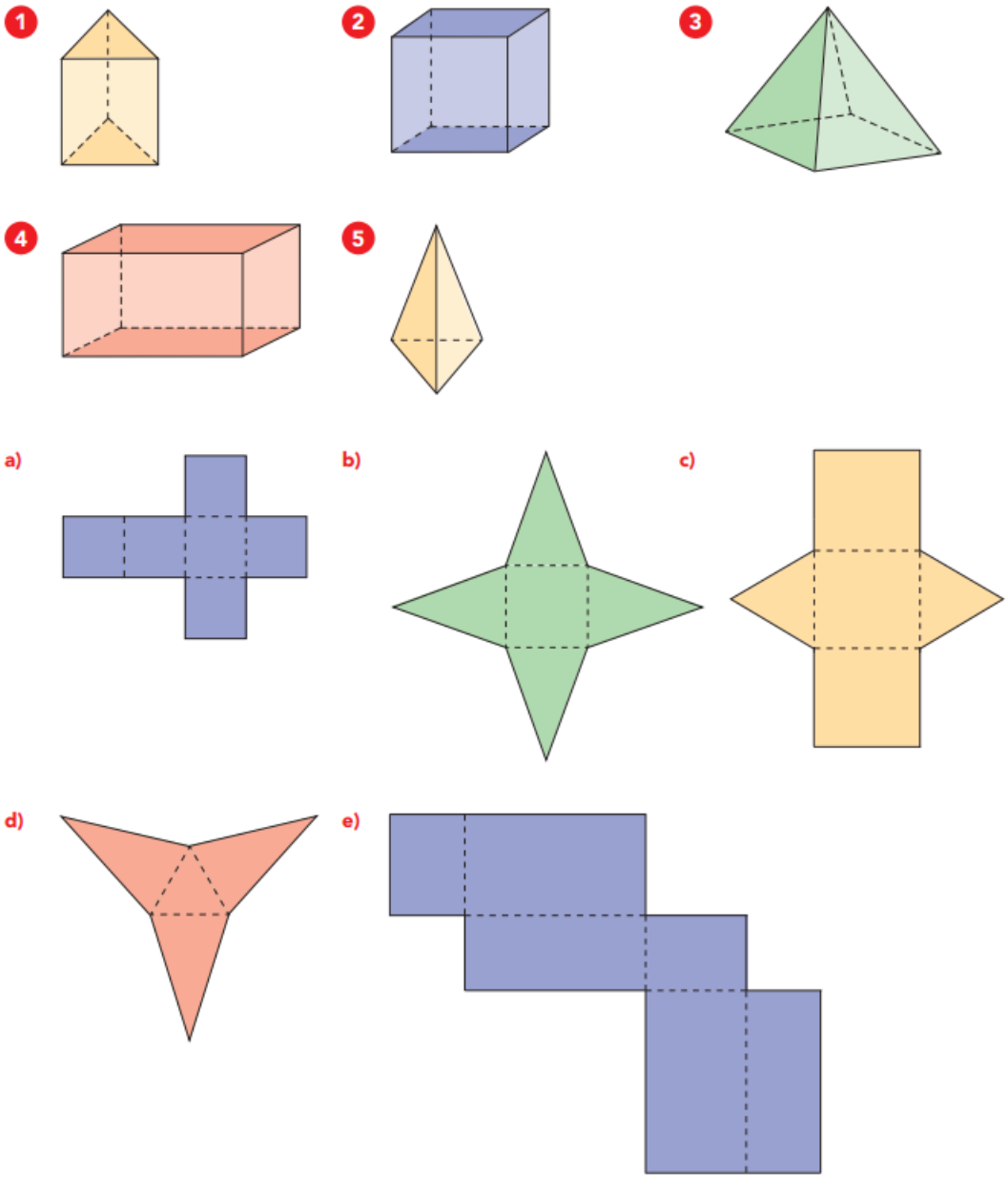
Question 3 (5 marks)

Complete the table below.

3D shape	Name the 3D shape	Identify the base shape	Number of faces	Number of edges	Number of vertices
					
					
					
					
					

Question 4 (5 marks)

Match each solid figure to its net.



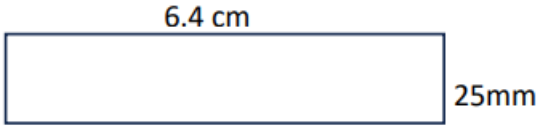
Acknowledgments

Date/s	Person/s who helped	How they helped?

Section 2 - Area

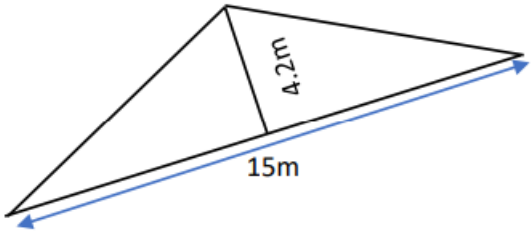
Question 1 (2 marks)

Find the area of the rectangle in centimetres.



Question 2 (2 marks)

Find the area of the triangle below in metres.



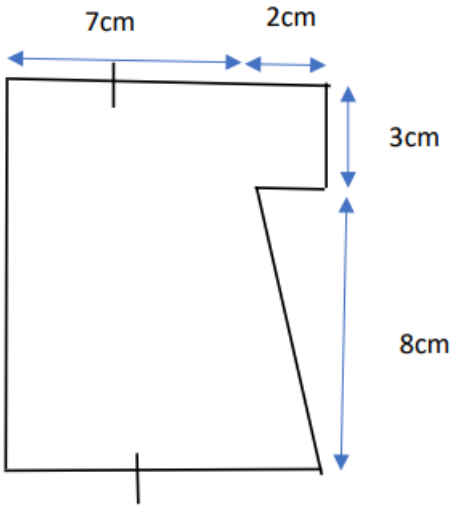
Question 3 (2 marks)

Calculate the area of a circle with a radius of 10 cm.

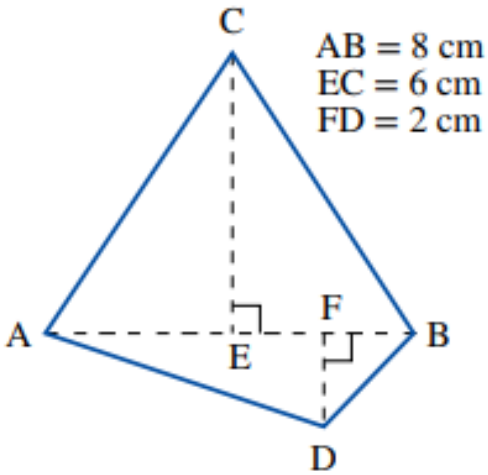
Question 4 (3 marks each)

Calculate the area of the composite shapes below in centimetres.

a.

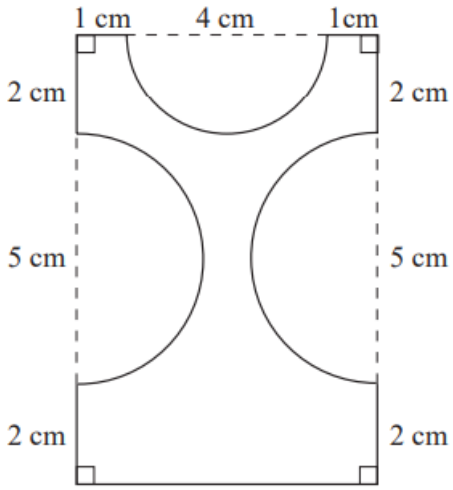


b.



Question 5 (4 marks)

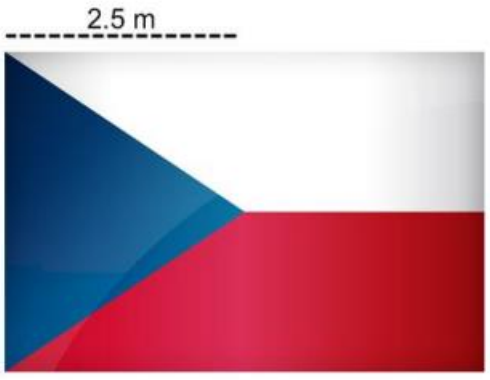
Find the area of the figure below correct to 1 decimal place. All measurements are in centimetres.



Question 6 (4 marks)

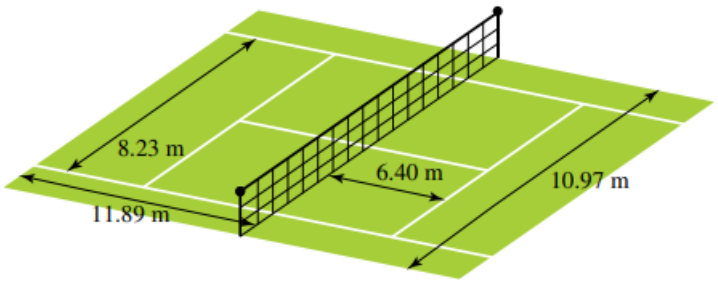
The Czech Republic's flag is shown below. The flag is 5.0 m by 3.0 m,

What is the area of each colour in the flag?



Question 7 (4 marks)

A tennis court used for doubles is 10.97 m wide, but a singles court is only 8.23 m wide, as shown in the diagram.



a. What is the area of the doubles tennis court?

b. What is the area of the singles court?

Acknowledgments

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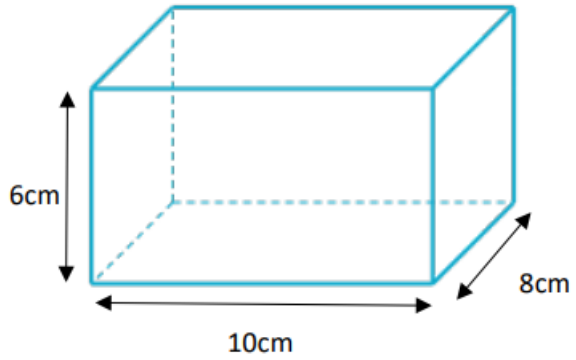
Section 3 – Surface area

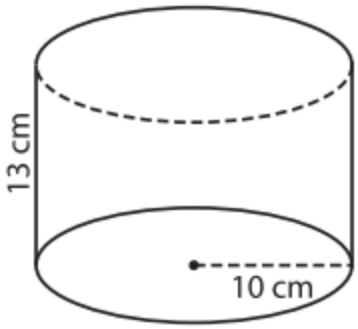
Question 1 (3 marks each)

Find the surface area of the shapes below.

a.

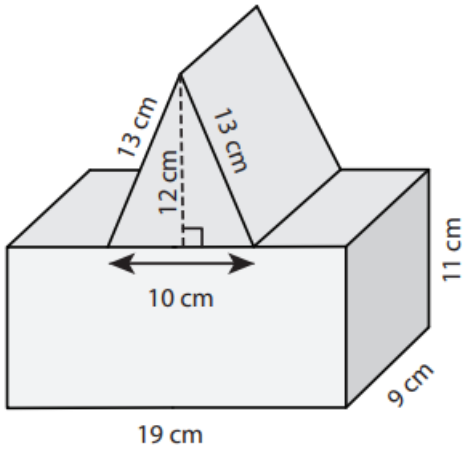


b.



Question 2 (5 marks)

Determine the surface area of the composite shape below.



Acknowledgments

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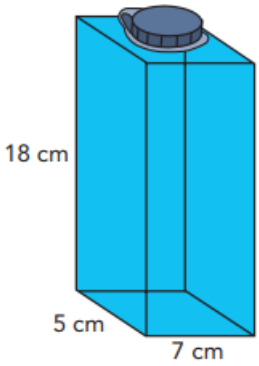
Section 4 –Volume

Question 1 (2 marks)

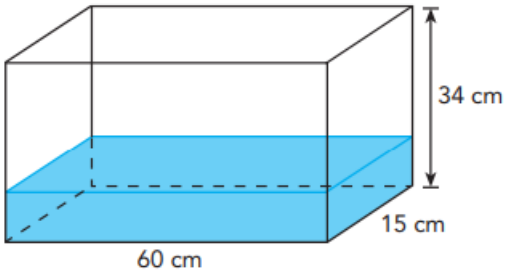
Savannah has a water bottle that is a rectangular prism. The bottle measures 7cm by 5cm by 18cm. If the bottle is complete filled with water, how many cubic centimetres of water were in the bottle?



Question 2 (3 marks)

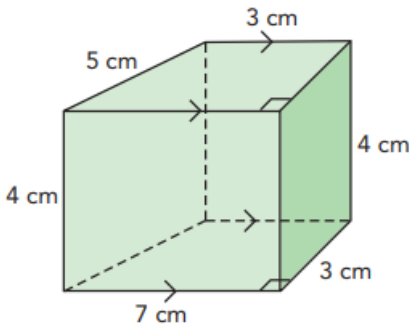
A rectangular fish tank 60 centimetres by 15 centimetres by 34 centimetres is a third full of water.

Find the volume of water needed to fill the tank completely.



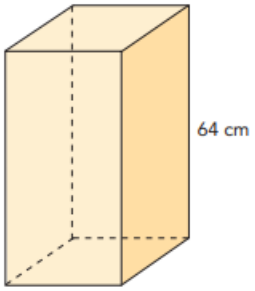
Question 3 (4 marks)

Find the volume of the block of wood in cubic centimetres.



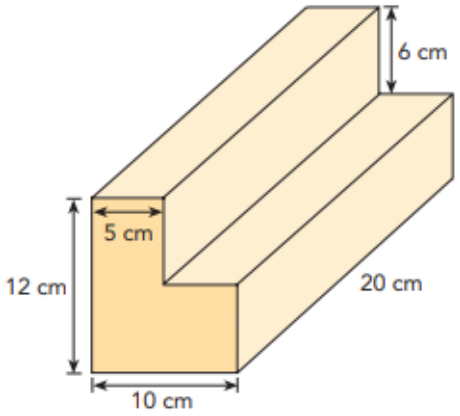
Question 4 (3 marks)

The volume of a rectangular tank with a square base is 63,908 cubic centimetres. Its height is 64 centimetres. Find the length of an edge of one of the square bases. Round your answer to the nearest tenth of a centimetre.



Question 5 (4 marks)

Find the volume of the composite shape below.



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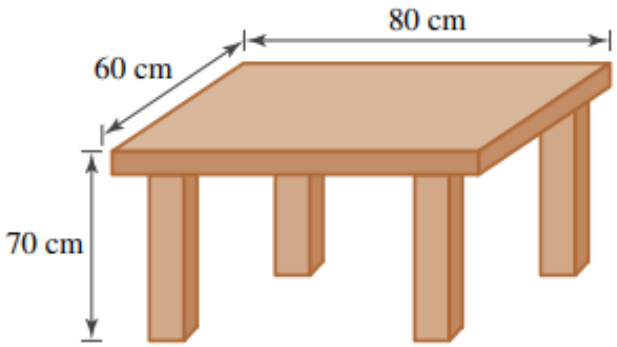
Section 5 – Applications

Question 1 (6 marks)

The table shown below is to be varnished (including the base of each leg). The tabletop has a thickness of 180 mm and the cross-sectional dimension of the legs is 50 mm by 50 mm.

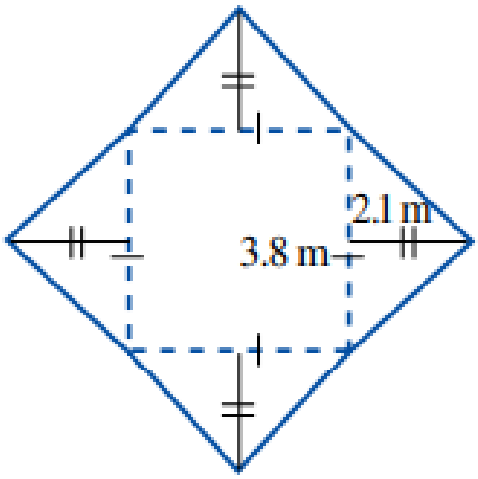


A friend completes the calculation as shown. Assume there are no simple calculating errors. Analyse the working presented and justify if the Total Surface Area (TSA) calculated is correct.

Table top (inc. leg bases)	0.96	$2 \times (0.8 \times 0.6)$
Legs	0.416	$16 \times (0.52 \times 0.05)$
Table top edging	0.504	$0.18 \times (2(0.8 + 0.6))$
TSA	1.88 m^2	

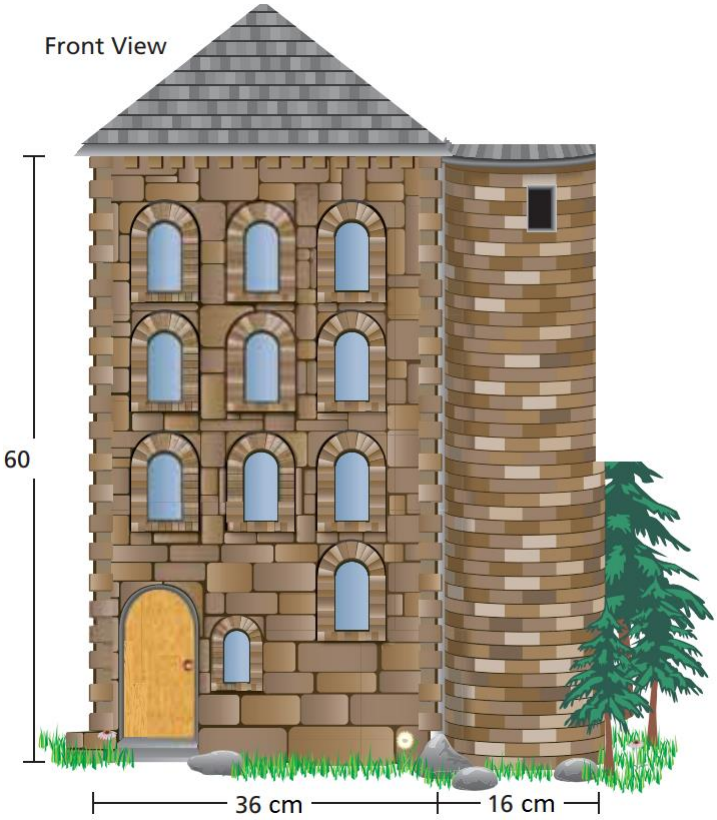
Question 2 (6 marks)

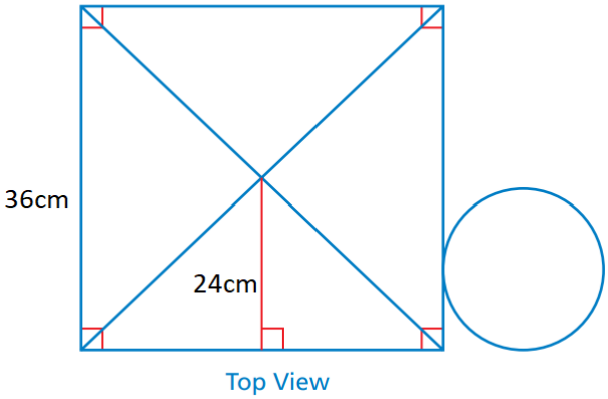
Show THREE different strategies to calculate the area of the given shape.



Question 3 (6 marks)

You are manufacturing a scale model of old houses. Below is the current model you are working on.





a. Determine a strategy for finding the surface area of this model. Explain the strategy that you would use and why.

b. Carry out your strategy from (a) and determine the surface area of this model.

Acknowledgments

Date/s	Person/s who helped	How they helped?