μNIT TEST #7-2A | Australian Curriculum Mathematics | February 2025

ACACIA TUTORING

Measurement 7

μnit Test

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Instructions: Read all questions carefully to ensure you understand what is being asked. When completing your official tests / exams, your grade will be based upon your: **understanding, fluency, reasoning, and problem solving,** so ensure you show all lines of working and draw accurate, labelled diagrams where necessary. (ACiQ|9.0 Mathematics standard elaborations found on final page (general assessment marking standards)). [Practise tests are marked out of a score of 10]. For multiple choice questions, tick or fill in the circle next to the corresponding letter under the question.

Check your work if you have time. *Remember:* you don't have to start at question one, it's always best to firstly look through the test, highlight the easy looking questions and complete them first, then secondly, go back through and work on the harder questions. Good luck! And remember to breathe!

$$\sum = \frac{\quad}{10} = \quad \%$$

Part 1: Multiple Choice (2 marks)

Question 1:

Which unit is most appropriate to measure the length of a football field?

A. $Millimetres\ (mm)$
B. $Centimetres\ (cm)$
C. $Kilometres\ (km)$
D. $Metres\ (m)$

◯ A ◯ B ◯ C ◯ D

Space for question 1:

Question 2:

What is the area of a rectangle with length $5\,cm$ and width $3\,cm$?

A. $8\,cm^2$ **B.** $15\,cm^2$ **C.** $10\,cm^2$ **D.** $5\,cm^2$

◯ **A** ◯ **B** ◯ **C** ◯ **D**

Space for question 2:

Part 2: Short Answer (4 marks)

Question 3:
Convert $4\,litres$ **to** $millilitres$ **.**

Question 4:
Calculate the perimeter of a square plot of land where one side measures $600\,metres$ **, then convert your answer to** $kilometres$ **.**

Part 3: Problem Solving (4 marks)

Question 5:

You have a room that is $4\,metres$ long and $3\,metres$ wide. If you want to cover the floor with tiles that each measure $30\,cm$ by $30\,cm$, how many tiles will you need, rounded up to the nearest whole tile?

Question 6:

A water tank is in the shape of a cube with each side measuring $2\,metres$. Calculate the volume of water it can hold in cubic $metres$.

Solutions

1. (1 mark)

D. $Metres\ (m)$

- Metres are the most practical unit for measuring a football field.

2. (1 mark)

B. $15\ cm^2$

$$\begin{aligned}\text{Area} &= \text{length} \times \text{width} \\ &= 5\,cm \times 3\,cm \\ &= 15\,cm^2\,.\end{aligned}$$

3. (2 marks)

$$1\ litre = 1000\,mL$$

$$\begin{aligned}&\rightarrow 4\ litres \\ &= 4 \times 1000\,mL \\ &= 4000\,mL\,.\end{aligned}$$

4. (2 marks)

$$\begin{aligned}\text{Perimeter} &= 4 \times \text{side length} \\ &= 4 \times 600\,m \\ &= 2400\,metres\end{aligned}$$

$$1\,km = 1000\,m$$

$$\begin{aligned}&\rightarrow \frac{2400\,\cancel{m}}{1000\,\cancel{m}/km} \\ &= 2.4\,km\,.\end{aligned}$$

5. (3 marks)

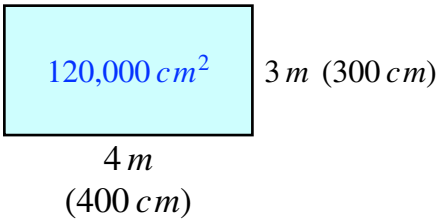
Area of the room:

Easier to convert length and width to cm first: (as tile dimensions are in cm)

$1\,m = 100\,cm$ $\quad 400\,cm \times 300\,cm = 120{,}000\,cm^2$. $\quad (cm \times cm = cm^2)$

Area of one tile: $30\,cm \times 30\,cm$

$= 900\,cm^2$.



Number of tiles needed:

(How many tiles fit into the room?)

(Area of room ÷ Area of one tile)

$\rightarrow 120{,}000\,\cancel{cm^2} \div 900\,\cancel{cm^2}$

$= \dfrac{120{,}0\cancel{00}}{9\cancel{00}}$

$= \dfrac{1{,}200}{9}$

≈ 133.33

Rounded to the nearest whole tile:

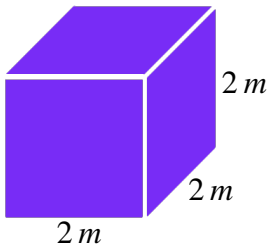
$= 134$ tiles.

6. (1 mark)

Volume of a cube $=$ side^3

$= 2^3\,m^3 \quad (2^3 = 2 \times 2 \times 2)$

$= 8$ cubic metres .



$$\sum = \frac{\quad}{10} = \quad \%$$

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Space 7

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$$\sum = \frac{\quad}{10} = \quad \%$$

Part 1: Multiple Choice (2 marks)

Question 1:

Which of these shapes has exactly 4 lines of symmetry?

A. Square **B. Rectangle** **C. Equilateral Triangle** **D. Circle**

◯ **A** ◯ **B** ◯ **C** ◯ **D**

Space for question 1:

Question 2:

What kind of transformation is described when a shape is mirrored over a line?

A. Rotation **B. Translation** **C. Reflection** **D. Dilation**

◯ A ◯ B ◯ C ◯ D

Space for question 2:

Part 2: Short Answer (4 marks)

Question 3:

List all the properties of a parallelogram.

Question 4:

Draw a shape, that is *not* a rectangle, with rotational symmetry of order 2 (i.e., it looks the same after a 180-degree rotation).

Part 3: Problem Solving (4 marks)

Question 5:

Describe what happens to a triangle when you reflect it across the y - axis and then translate it 3 units right and 2 units up.

Question 6:

A regular hexagon has six lines of symmetry. Draw a hexagon and one line of symmetry, and describe how it divides the hexagon.

Solutions

1. (1 mark)

A. Square

- A square has 4 lines of symmetry (one through each pair of opposite vertices and one through each pair of opposite midpoints of sides).

2. (1 mark)

C. Reflection

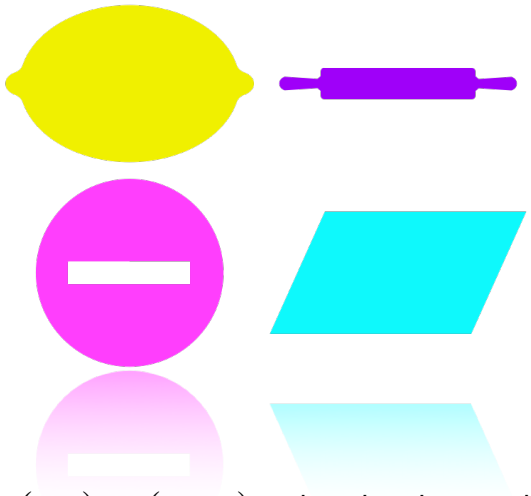
- Flipping a shape over a line describes a reflection.

3. (2 marks)

Opposite sides are equal in length.
Opposite angles are equal.
Opposite sides are parallel.
Consecutive angles are supplementary (they add up to 180 degrees).

4. (2 marks)

[Description for drawing, e.g., a 2d drawing of a rolling pin, or a lemon]



5. (2 marks)

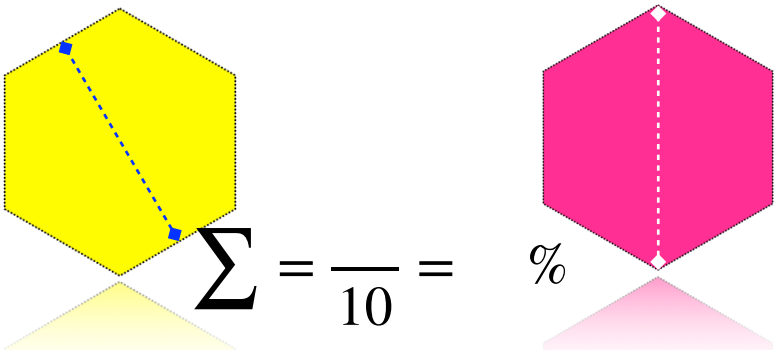
Reflecting across the y-axis: $(x, y) \rightarrow (-x, y)$ and each point translating 3 units right and 2 units up;
Each point (x, y) becomes $(-x + 3, y + 2)$.

The result is a triangle with the same shape but mirrored across the y-axis and moved to the right and up.

6. (2 marks)

Draw a line from one vertex to the opposite vertex (pink hexagon), or through the midpoints of opposite sides (yellow hexagon).

This line divides the hexagon into two identical halves, each half being a mirror image of the other.



General Assessment Marking Standards

Remember: When your official tests are marked, they won't be a score out of 10, they will be a grade (A,B,C,D,E) based on the following standards:

ACiQ | v9.0

Year 7 Mathematics standard elaborations

		A	B	C	D	E
		The folio of student work contains evidence of the following:				
Mathematical proficiencies	**Understanding**	accurate and consistent identification, representation, description and connection of mathematical concepts and relationships in complex unfamiliar, complex familiar, and simple familiar situations	accurate identification, representation, description and connection of mathematical concepts and relationships in complex familiar and simple familiar situations	identification, representation, description and connection of mathematical concepts and relationships in simple familiar situations	partial identification, representation and description of mathematical concepts and relationships in some simple familiar situations	fragmented identification, representation and description of mathematical concepts and relationships in isolated and obvious situations
	Fluency	choice, use and application of comprehensive facts, definitions, and procedures to find solutions in complex unfamiliar, complex familiar, and simple familiar situations	choice, use and application of effective facts, definitions, and procedures to find solutions in complex familiar and simple familiar situations	choice, use and application of facts, definitions, and procedures to find solutions in simple familiar situations	choice and use of partial facts, definitions, and procedures to find solutions in some simple familiar situations	choice and use of fragmented facts, definitions and procedures to find solutions in isolated and obvious situations
	Reasoning	comprehensive explanation of mathematical thinking, strategies used, and conclusions reached in complex unfamiliar, complex familiar, and simple familiar situations	detailed explanation of mathematical thinking, strategies used, and conclusions reached in complex familiar and simple familiar situations	explanation of mathematical thinking, strategies used, and conclusions reached in simple familiar situations	partial explanation of mathematical thinking, strategies used, and conclusions reached in some simple familiar situations	fragmented explanation of mathematical thinking, strategies used, and conclusions reached in isolated and obvious situations
	Problem-solving	purposeful use of problem-solving approaches to find solutions to problems.	effective use of problem-solving approaches to find solutions to problems.	use of problem-solving approaches to find solutions to problems.	partial use of problem-solving approaches to make progress towards finding solutions to problems.	fragmented use of problem-solving approaches to make progress towards finding solutions to problems.

Key	shading emphasises the qualities that discriminate between the A–E descriptors

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