



YEAR 7 Mathematics 2020

Assessment Task 2: In-Class Assignment

Student Name:

Class / Teacher:

Due Date: Week 6

Assessment Name: In-Class Assignment

Mark: /64

Weighting: 40 %

SYLLABUS OUTCOMES TO BE ASSESSED:

MA4-1WM	communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols
MA4-2WM	applies appropriate mathematical techniques to solve problems
MA4-3WM	recognises and explains mathematical relationships using reasoning
MA4-4NA	compares, orders and calculates with integers, applying a range of strategies to aid computation
MA4-12MG	calculates the perimeters of plane shapes and the circumferences of circles
MA4-13MG	uses formulas to calculate the areas of quadrilaterals and circles, and converts between units of area
MA4-18MG	identifies and uses angle relationships, including those related to transversals on sets of parallel lines
MA4-21SP	represents probabilities of simple and compound events

DIRECTIVES TO BE ASSESSED:

Apply:	To use.
Calculate:	To determine mathematically.
Communicate:	To share information clearly.
Connect:	To link or bring together.
Explain:	To make clear by describing in detail.
Identify:	To establish what something is.
Represent:	To state clearly, using appropriate terminology.
Solve:	To find an answer to or explanation for a problem.

TASK DESCRIPTION:

You will be exploring applications of Mathematics in the development of new suburb in a local community. This task will assess the following topics:

- Angle Relationships
- Measurement: Length, Perimeter and Area
- Negative Integers
- Probability

You will be provided class time to complete this assessment task. Details are on the next page.

Recommended Equipment:

- ❖ NESAs-approved scientific calculator – for checking answers.
- ❖ Pens, ruler, pencils, protractor.
- ❖ Grid paper – provided by your teacher.
- ❖ Map – provided by your teacher.

PART A – Angle Relationships – Map Activity (MA4-18MG) (18 marks)

1) **FILL the BLANK to complete following definitions.** (5 Marks)

Word Bank – ninety, perpendicular, supplementary, arm, opposite, point

- a) Complementary angles have a sum of _____ degrees.
- b) _____ angles have a sum of 180 degrees.
- c) Vertically _____ angles are equal.
- d) Angles at a _____ add to 360 degrees.
- e) Adjacent angles share an _____.

2. **Using the *map provided*, identify one each of the following pairs:** (5 Marks)

- a) Complementary angles (*highlight and label on the map*)
- b) Supplementary angles (*highlight and label on the map*)
- c) Vertically opposite angles (*highlight and label on the map*)
- d) Perpendicular streets:and
- e) Parallel streets:and

3. **Apply your understanding of the proofs for angle pairs in parallel lines.** (8 marks)

- a) On the map provided, identify 2 *parallel streets* cut by a *transversal* street. Copy and label these below. (1 mark)

- b) Clearly *label* the all *points* on your diagram above (points of intersection and endpoints), using the *correct notation*. (1 mark)

c) By first measuring the angles with a protractor, that have been drawn in part (a), write a geometrical statement or proof that demonstrates the relationship between the following angle pairs:

i. Corresponding angles: (2 marks)

ii. Alternate angles: (2 marks)

iii. Co-interior angles: (2 marks)

PART B – Measurement: Length, Perimeter and Area. (MA4-12MG, MA4-13MG) (22 marks)

1. Using the **grid paper provided**, neatly draw and label the following 4 polygons. (2 marks each = 8 marks)

Each must have an **area of 16m^2** .

Use the scale: **1cm = 10m**

Show the dimensions and all mathematical reasoning neatly next to the shapes you have drawn on the grid paper.

Shapes:

- a) Rectangle
- b) Square
- c) Triangle
- d) Kite or rhombus

2. Calculate the perimeter of two of the above polygons. Show all working in the space provided (2 marks)

a. Choice 1: _____ Perimeter = _____

b. Choice 1: _____ Perimeter = _____

3. Identify **three** different polygons **on your map** (e.g. square, triangle, rectangle, trapezium)

a) **Using the scale provided on the map**, clearly label the true lengths on each side of the polygons. (3 marks total)

b) Calculate the area and perimeter of each polygon identified. (Show all mathematical working in the space below.) (3 marks each)

i. **Polygon 1:**

Area =

Perimeter =

ii. **Polygon 2:**

Area =

Perimeter =

iii. **Polygon 3:**

Area =

Perimeter =

PART C – Negative Integers – Number Narratives (MA4-4NA) (12 marks)

1) Complete the following rules using either the words negative or positive: (4 marks)

- a. Adding a negative number to a number is the same as _____ a positive number
- b. Subtracting a negative number from a number is the same as _____ a _____ number
- c. A positive number multiplied or divided by a negative number gives a _____ answer
- d. A negative number multiplied or divided by a negative number gives a _____ answer

2) In the space below, create **4 short narratives** to fit your **map**, with a number sentence to explain each, showing correctly calculated examples for **4** of the following: (2 marks each = 8 marks)

- Adding a positive number to a negative number
- Adding a negative number to a positive number *see Eg 1 below
- Adding a negative number to a negative number
- Subtracting a positive number from a negative number
- Subtracting a negative number from a positive number
- Subtracting a negative number from a negative number
- Multiplying or dividing two negatives numbers
- Multiplying a positive and a negative number **see Eg 2 below

*Eg 1. Mr V walked 200m east along Lee Ave from KFC. He then realised he had dropped his keys 100m back, so went back to get them. How far is he now from KFC? $200 + (-100) = 100$

**Eg 2. Mr V bought 2 Ultimate Boxes at \$10.95 each on his credit card: $2 \times (-10.95) = -21.90$

Label the options you are choosing from the above list as a, b, c and d

a) _____

b) _____

c) _____

d) _____

PART D – Probability (MA4-21SP) (12 marks)

1. Give an *example* for each of the following probabilities: (5 marks)

- a) Impossible: _____
- b) Unlikely: _____
- c) Even chance: _____
- d) Likely: _____
- e) Certain: _____

2. Write a *definition* for the following: (2 marks)

- a) Sample space: _____
- b) Complementary events:

3. **Use your provided map** to calculate the following probabilities as fractions. (2 marks)

- a) A street chosen at random has a name that starts with 'M' ie $P(M) = \dots\dots\dots$
- b) A street chosen at random has a name that **DOES NOT** start with an S: $P(\text{NOT S}) = \dots\dots\dots$

4. **On your provided map**, add the following features to create the given probabilities: (3 marks)

- a) Place house numbers on McLaughlin Rd so that the chance of choosing a house at random that has an even number is 0.5.
- b) Place takeaway shops on Olsen St so that the probability of choosing KFC at random is 20%.
- c) Place donut shops, a school and your house so that it is *impossible* for you to drive to school without going past at least one donut shop.

ASSESSMENT CRITERIA – STUDENT CHECKLIST:

Have you:

- Referred to the following textbook chapters, accessible on Google Classroom?
 - Angle Relationships – Chapter 2
 - Length, Perimeter & Area – Chapter 10 (+ Yr 8 Chapter 3 Ex 3D)
 - Negative Integers – Chapter 3
 - Probability – Chapter 5
- Read the instructions carefully?
- Referred to the Marking Criteria below?
- Asked your teacher for clarification of any questions?
- Watched the lesson videos posted to the Yr 7 Maths Site during remote learning time?

Marking Criteria: PART B – Length, Perimeter & Area (22 marks)

Question	Marks	Description
Q1a. Rectangle	2	Shape and area are correct as required
	1	Shape OR area are correct as required
	0	Not attempted or totally incorrect
Q1b. Square	2	Shape and area are correct as required
	1	Shape OR area are correct as required
	0	Not attempted or totally incorrect
Q1c. Triangle	2	Shape and area are correct as required
	1	Shape OR area are correct as required
	0	Not attempted or totally incorrect
Q1d. Rhombus or kite	2	Shape and area are correct as required
	1	Shape OR area are correct as required
	0	Not attempted or totally incorrect
Q2. Perimeters	2	Both shapes named and correct perimeter given
	1	One shape named and correct perimeter given
	0	Not attempted or totally incorrect
Q3a. Sides of Polygons	3	3 quadrilaterals have correct side lengths (in metres) correctly labelled
	2	2 quadrilaterals have correct side lengths (in metres) correctly labelled
	1	1 quadrilateral has correct side lengths (in metres) correctly labelled
	0	Not attempted or totally incorrect
Q3bi. Polygon i. Perimeter & Area	3	Substitution into correct area formula (1), Correct calculation (1), Correct working and answer for perimeter (1).
	2	One element from above is missing / incorrect.
	1	Two elements from above are missing / incorrect.
	0	No attempt or all three elements is missing / incorrect.
Q3bii. Polygon ii. Perimeter & Area	3	Substitution into correct area formula (1), Correct calculation (1), Correct working and answer for perimeter (1).
	2	One element from above is missing / incorrect.
	1	Two elements from above are missing / incorrect.
	0	No attempt or all three elements is missing / incorrect.
Q3biii. Polygon iii. Perimeter & Area	3	Substitution into correct area formula (1), Correct calculation (1), Correct working and answer for perimeter (1).
	2	One element from above is missing / incorrect.
	1	Two elements from above are missing / incorrect.
	0	No attempt or all three elements is missing / incorrect.

Part B mark:

/22

Comment:

Marks:

Teacher Comment:

PART A – Angle Relationships / 18

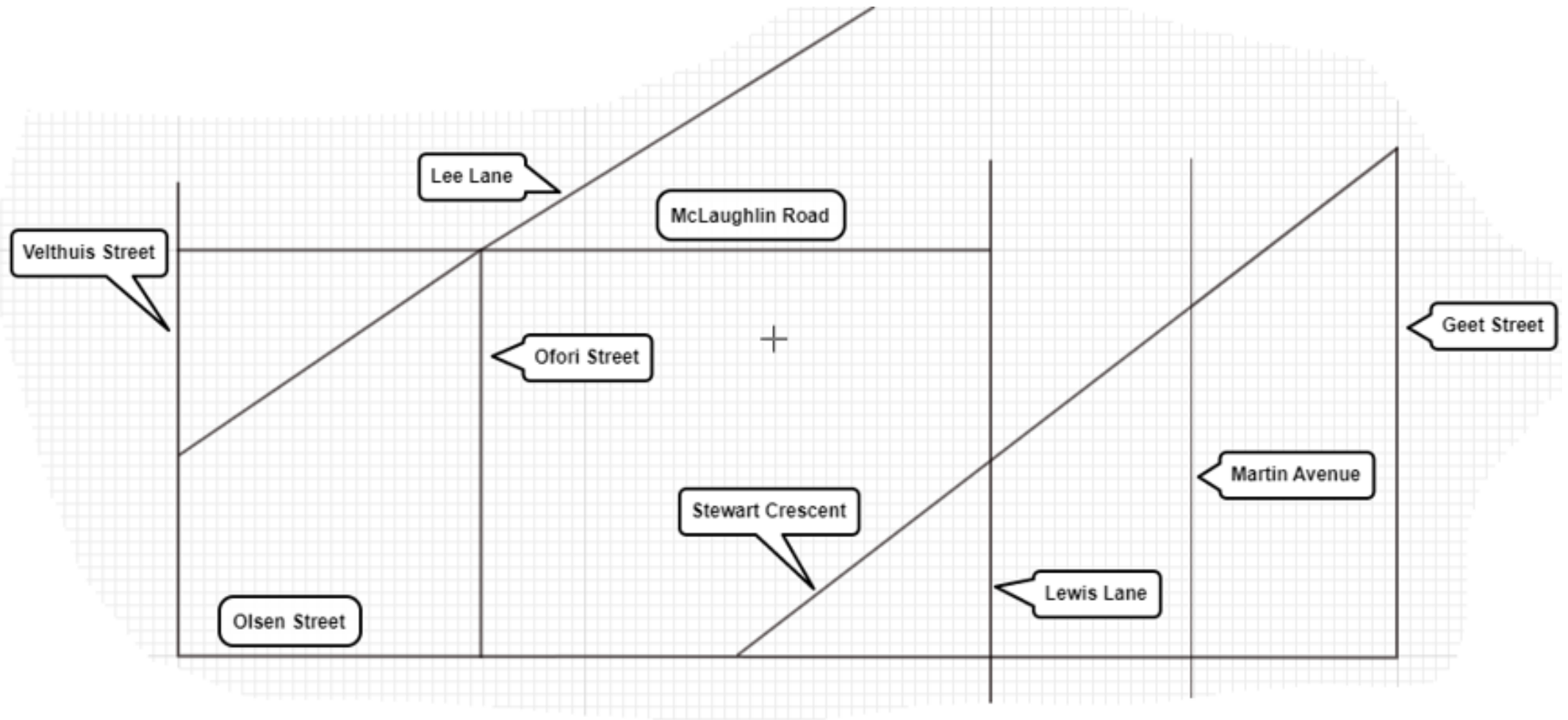
PART B – Length, Perimeter & Area / 22

PART C – Negative Integers / 12

Part D – Probability / 12

Total Mark: / 64

Student Reflection:



MAP 1

Scale: 1cm = 10m