



2020 Year 11 SET Mathematics

Assessment Task 2

Due Date: Monday Week 10 21/9/2020	Assessment Name: Assessment 2
Mark: /31	Weighting: 40 %
SYLLABUS OUTCOMES TO BE ASSESSED:	
MS11-2	Represents information in symbolic, graphical and tabular form
MS11-3	Solves problems involving quantity measurement, including accuracy and the choice of relevant units
MS11-4	Performs calculations in relation to two-dimensional and three-dimensional figures
MS11-5	Models relevant financial situations using appropriate tools
DIRECTIVES TO BE ASSESSED:	
Calculate	Determine (the amount or number of something) mathematically
Interprets	To draw meaning from a mathematical situation.
Investigate	To examine situations using various techniques and in the process of their exploration. develop skills that can be applied to other problems.
Justify	To provide evidence to support your solution.
Model	To give a representation of mathematical problem obtained.
Predict	To make an educated guess about future events.
Solve	To manipulate something for a particular purpose to find the answer for mathematical problems.
<u>TASK DESCRIPTION:</u>	
Part A: Data Collection and presentation	
<ul style="list-style-type: none">- Collect total number of medals for 12 countries- Arrange the medals in ascending order- Create a back to back stem and leaf- Create a grouped frequency table- Create a frequency histogram	
Part B: Buying a car	
<ul style="list-style-type: none">- Complete the table of values- What is the gradient and y-intercept?- Plot the line on the cartesian plane- Calculate the simple interest- Calculate the compound interest and how much more interest you receive versus simple- Find how long you have to invest	

Complete all questions in the space provided.

Part A: Data

Mr Lee and Mr Velthuis asked their IBL class to research the overall performance of the countries that participated in the 2000 Sydney and 2004 Athens Olympics. They gave their class the medal tables for 2000 Sydney Olympics and 2004 Athens Olympics. The students were asked to compare the overall performance in only one type. Complete the questions below to find out how consistent the countries were. **If your selected country only shows on one year list, use 0 as its number for the other list**

1. Choose twelve countries that participated in both the 2000 Sydney and 2004 Athens Olympics to complete the table below: See appendix A and B on pages 12 and 13.

(3 marks)

Note: No two students should choose the same countries.

Total Number of Medals		
Country	2000 Sydney Olympics Total Number of medals	2004 Athens Olympics Total Number of medals
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

4. Combining your answer(s) in question 2 to create:
- a) A Grouped Frequency Table using equal class intervals of your creation
 - b) A Frequency Histogram

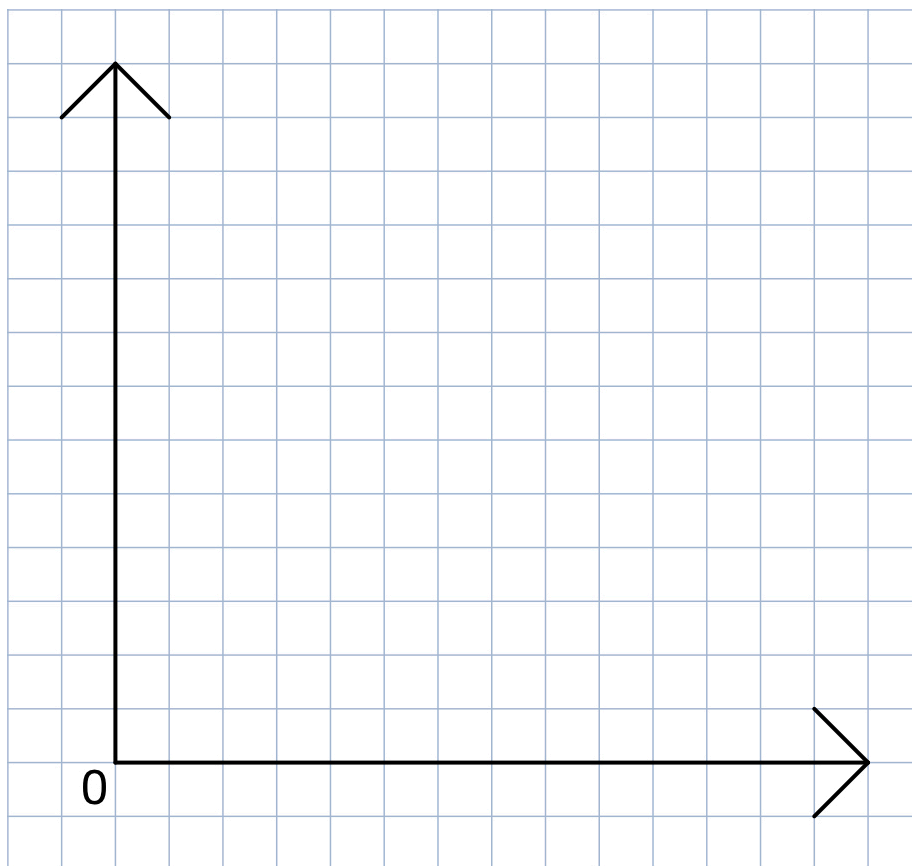
(3 marks)

a)

Intervals for number of medals	Tally	Frequency

- b) **HINT:** Remember SALT (Scale, Axis, Label, Title), remember to leave a half column space and box around the indents

(4 marks)



Part B: Saving for a Car (Linear Relationships and Finance)

- a) You plan to save \$10000 for a car over a period of time. Choose an amount you would be comfortable saving if you were working a full-time job i.e \$400 a week. If you start out with \$2000 dollars saved. **Create a table of values** to show this data using the equation $y = mx + 2000$ where m is how much you're saving per week. **In the final X box you will need to tell me at what year will you have saved 10000.** (Attach a suitable table to your paper if space does not permit)

(3 marks)

X	0							
Y	2000							10000

- b) What is the gradient and y intercept of this equation?

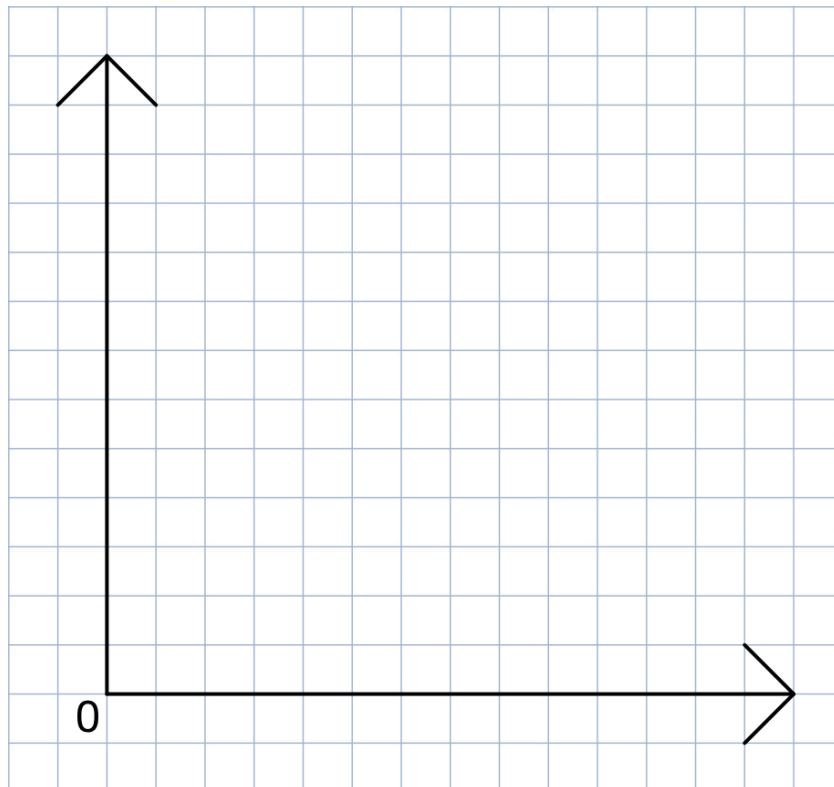
(1 mark)

i. Gradient = _____

ii. Y intercept = _____

- c) Plot the table of values on the graph below remembering to have values spaced equally apart

(3 marks)



- d) Instead of saving every week you have decided to put your \$2000 plus your first weeks saving into a savings account with the bank. If you invest this amount at a simple interest rate of 6% for 5 years, how much interest do you accrue? **(2 marks)**
- e) You decide to compound the interest instead of using simple interest. You have the same amounts from the previous question. How much more interest do you get if you compound yearly? **(3 marks)**
- f) You plan to get your \$10000 saved using simple interest. If you deposit \$2000 plus your first week of savings at 8% p.a, how long will it take to get to \$10000? Answer to 2 Decimal Places. **(3 marks)**

Marking Guide	Marks
Part A -	16
1. Number of medals table (MS11-2)	
• All columns successfully filled in	3
• Two columns successfully filled in	2
• One column/Half of both columns successfully filled in	1
2. Arrange the medals won in 2000 and 2004 in ascending order (MS11-2)	
• Both years successfully arranged in rows of ascending order	2
• Parts of the rows have been arranged in an order	1
3. Back to Back Stem and Leaf plot (MS11-2)	
• Stem and both leaves arranged in ascending order, key provided	4
• Stem and both leaves arranged in ascending order, no key provided	3
• Most of the Stems and both leaves are arranged in ascending order with or without a key	2
• Minimal arrangement of Stems and leaves in ascending order with or without a key	1
4. Grouped Frequency Table (MS11-2)	
• All columns correctly organised	3
• Some mistake made when organising	2
• Minimal organisation or completion of table	1
5. Grouped Frequency Histogram (MS11-2)	
• Frequency Histogram completed with all elements of SALT followed	4
• Frequency Histogram completed with a majority of elements of SALT followed	3
• Frequency Histogram completed with most elements of SALT followed.	2
• Frequency Histogram completed with some elements of SALT followed	1
Part 2 – Saving for a Car	15
1. Table of Values (MS11-3) (MS11-4)	
• Table of value correctly completed	3
• Majority of table of values completed and/or one mistake carried through	2
• Some of table of values completed	1
2. Gradient and Y-intercept (MS11-3) (MS11-4)	
• Both Gradient and Y-intercept correctly identified	1
• Correctly identifying gradient or y-intercept	½
3. Graphing (MS11-3) (MS11-4)	
• Points correctly plotted with an appropriate scale and line drawn	3
• Minor mistakes made when plotting points, drawing line and establishing scale	2
• Major mistakes made when plotting points, drawing line and establishing scale	1
No marks are allocated for no attempt/non-serious attempt	0

4. Simple Interest (MS11-5)			
	• Principle correctly established and Interest found		2
	• Some mistakes made when establishing principle and calculating interest		1
5. Compound Interest (MS11-5)			
	• Principle correctly established, Interest found and difference between simple and compound interest calculated.		3
	• Principle correctly established and Interest found		2
	• Some mistakes made when establishing principle and calculating interest		1
6. Simple Interest Problems (MS11-5)			
	• Number of years found and correctly rounded to 2.D.P		3
	• Number of years correctly found but not rounded		2
	• Correct working towards finding number of years		1
	Part A	Part B	Total
MS11-2	/16		/31
MS11-3/ MS11-4		/7	
MS11-5		/8	
Total	/16	/15	