Average Gradient & Average Rate of Change (Grade 12)

WORKSHEET

Name: _____ Class: _____

Date: _____ MARK ____ / 14

Answer all questions. Show all your working — marks are awarded for method as well as the final answer.

1 Determine the average gradient of $f(x) = x^2 + 1$ between $x = 1$ and $x = 3$. **(2)**

2 Determine the average gradient of $f(x) = x^2 + 1$ between $x = -1$ and $x = 2$. **(2)**

3 Write down the formula for average gradient between $x = a$ and $x = b$. **(1)**

4 Is the average gradient the same as the gradient at a point? Explain. **(2)**

5 Determine the average gradient of $f(x) = x^2$ between $x = 2$ and $x = 2{,}001$ (three decimals). **(3)**

6 What does the average gradient become as the two points move together? **(1)**

7 A car travels 240 km in 3 hours. What is its average rate of change of distance? **(1)**

8 Determine the average gradient of $f(x) = 2x + 5$ between any two points. **(2)**

TOTAL: 14 marks

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