Quadratic Number Patterns (Grade 11 & 12)

WORKSHEET

Name: ..... Class: .....

Date: .....

MARK ____ / 17

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

1 Show that 3 ; 8 ; 17 ; 30 ; 47 is a quadratic pattern. **(2)**

2 Determine T_n for 3 ; 8 ; 17 ; 30 ; 47 **(4)**

3 Which term of 3 ; 8 ; 17 ; 30 ; 47 equals 122? **(3)**

4 Determine the general term of the pattern shown in the difference table below. (3)

T_n	1		5		11		19		29
1st		4		6		8		10	
2nd			2		2		2		

5 $1\ ;\ p\ ;\ 11\ ;\ \ldots$ is a quadratic pattern whose first differences are $3\ ;\ 7\ ;\ \ldots$ Determine p. (2)

6 The second difference of a quadratic pattern is 6. Determine a. (1)

7 Calculate T_{10} if $T_n = 2n^2 - n + 2$. (2)

TOTAL: 17 marks

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