Test Two

Semester One 2017
UNIT 1 METHODS

Calculator Free 35 minutes   /30 marks

Only Formula Sheet Permitted

Name:

Place a tick in the box next to your Mathematics teachers name:

Mr Strain ☐

Ms Sindel ☐

Ms Rimando ☐

Ms Reynolds ☐

Dr Pearce ☐

Mrs Flynn ☐

Ms Ensly ☐

Mrs Carter ☐

Question 1   **(3, 3 = 6 marks)**

Find the equation of each linear function

    a) Passing through (2,-3) and (4,1)

    b) Perpendicular to the line $2x + y - 3 = 0$ and with x-intercept of -2.

Question 2 **(2 marks)**

Given the points (-3, 1) and (4, 2) find the **exact value** of the distance between them.

Question 3 **(2 marks)**

The gradient of the straight line between $(3, y)$ and (-2, 5) is $-\dfrac{3}{5}$. Find the value of y.

Question 4 **(1, 1 = 2 marks)**

The quadratic equation $kx^2 + 5x - 3 = 0$ has exactly one real solution.

    a) What is the value of the discriminant?

    b) Hence, find the value of k.

Question 5 (2, 2 = 4 marks)

Solve the following quadratic equations giving exact answers

a) $x^2 + 2x - 15 = 0$

b) $x^2 - 3x - 5 = 0$

Question 6 (2, 5 = 7 marks)

Determine the rules for the following tables
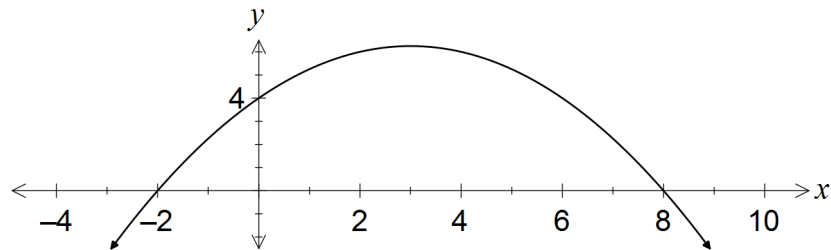
a)

x	-7	-6	-5	-4	-3
y	11	10	9	8	7

b)

x	1	2	3	4	5	6	7
y	2	2	4	8	14	22	32

Question 7   **(3, 2, 2**
= 7 marks)

(a)   Part of the graph of $y = ax^2 + bx + 4$ is shown below.

Determine the values of the coefficients a and b.

(b)   A quadratic has equation $y = x^2 - 6x + 2$. Determine

        (i)   the coordinates of its turning point.

        (ii)   the exact values of the zeros of the quadratic.