End of Unit Test

Name: _Answers_

Sequences, Functions and Graphs - FOUNDATION

1. The diagram shows patterns made with sticks.

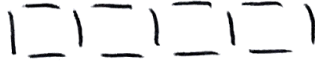Pattern 1   Pattern 2   Pattern 3

(a) How many sticks are in Pattern 3?

Answer ....10........

(1)

(b) Draw Pattern 4.

(1)

(c) How many sticks are in Pattern 6?

....

Answer ....19..................

(2)
(Total 4 marks)

2. Here is a linear sequence.

46   40   34   28   22   ......

Work out the nth term of the sequence.

....

....

Answer ....$-6n + 52$...........

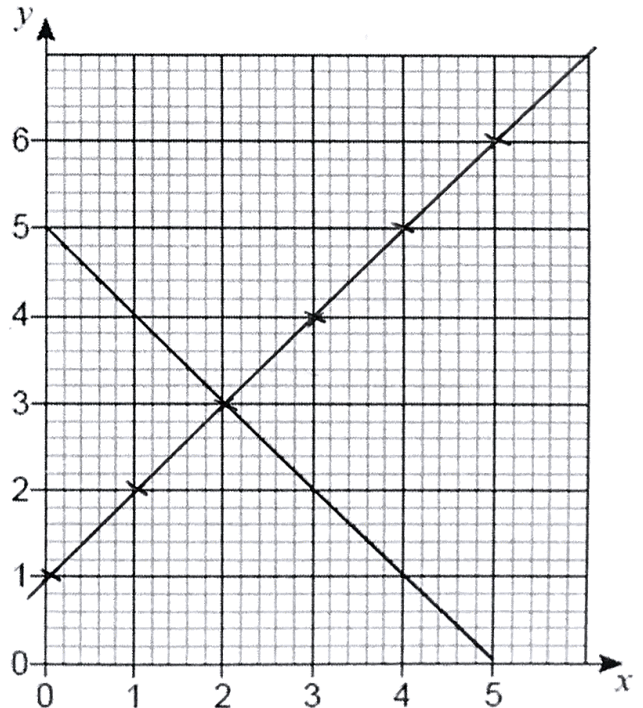**(Total 2 marks)**

3. Here is the graph of $y = 5 - x$ for values of x from 0 to 5

(a) On the same grid, draw the graph of $y = x + 1$ for values of x from 0 to 5

x	0	1	2	3	4	5
$y = x + 1$	1	2	3	4	5	6

(2)

(b) Use the graphs to solve the simultaneous equations
$y = 5 - x$ and $y = x + 1$

$x = $ ......2..............

$y = $ ......3..............

(1)
(Total 3 marks)

4. Here is a straight-line graph.

(a) Use the graph to work out the value of x when $y = 8$

Answer ....2.4.........

(1)

(b) Work out the gradient of the line.

$$\frac{rise}{run} = \frac{10}{2} = 5$$

Answer ....5.........

(3)

(Total 4 marks)
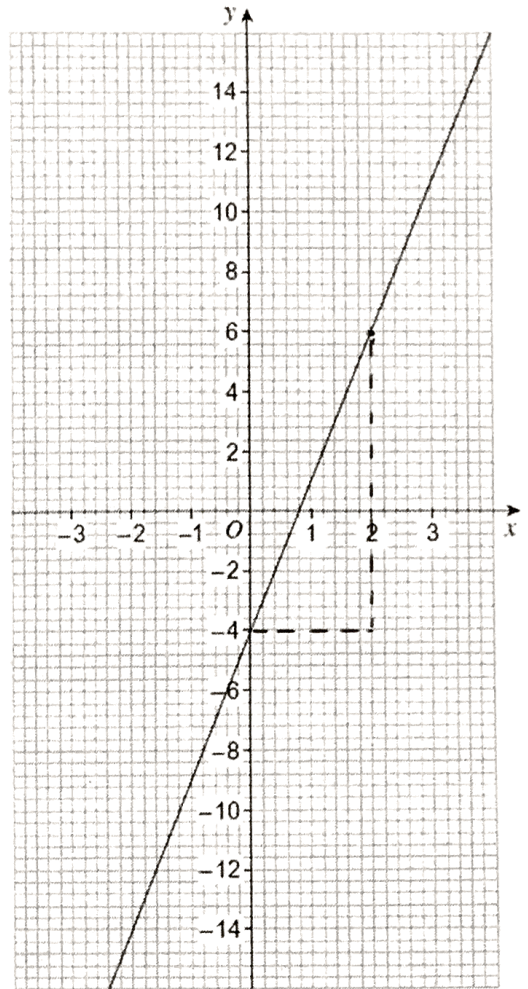
5. Circle the equation of a line that is parallel to $y = 5x - 2$

$y = 2x - 5$ $\quad\quad$ $\boxed{y = 5x + 2}$ $\quad\quad$ $y = 3x - 2$ $\quad\quad$ $y = -\frac{1}{5}x - 2$

(Total 1 mark)

6. (a) Complete the table of values for $y = 2 + x - x^2$

x	-3	-2	-1	0	1	2	3
y	-10	-4	0	2	2	0	-4

(2)

(b) Draw the graph of $y = 2 + x - x^2$ for values of x from -3 to 3

(2)

(c) Draw the line $y = -3$ on the same grid.

(1)

(d) Write down the solutions to the equation $2 + x - x^2 = -3$

Answer ....-1.8 and 2.8.........

(1)

(Total 6 marks)

(Total for test = 20 marks)