

1. Here is a quadratic sequence.

$$-1, 2, 7, 14, 23,$$

(i) Write down the Nth term.

.....  
(3 marks)

2. Coordinate  $A = (-6, 8)$  and coordinate  $B = (14, -2)$ .

Write down the midpoint of  $AB$

.....  
(2 marks)

3. Simplify  $5y^2 + 13 - 7y + y^2 + 5 - 3y$

.....  
(2 marks)

4. Simplify  $4y^3 + y^3 + 7h^3$

.....  
(1 mark)

5.  $a = 5$     $b = 3$     $c = -2$

Work out the value of  $ab + 2c$

.....  
(2 marks)

6. Simplify  $5a^2b \times 4ab^3$

.....  
(2 marks)

7. Simplify  $\frac{15e^4f^6}{3e^2f}$

.....  
(2 marks)

8. Simplify  $(5t^{-6})^3$

.....  
(2 marks)

9. Simplify  $\frac{6a^4 \times 2a^6}{3a^2}$

.....  
(2 marks)

10. Expand  $7t(3 + 9t)$

.....  
(1 mark)

11. Factorise  $6m^2 + 21m$

.....  
(2 marks)

12. Expand and simplify.  $(2x - 1)(x + 4)$

.....  
(2 marks)

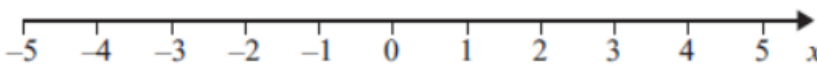
13. Factorise  $x^2 - 8x + 12$

.....  
(2 marks)

14. Solve  $8x - 9 = 7x - 1$

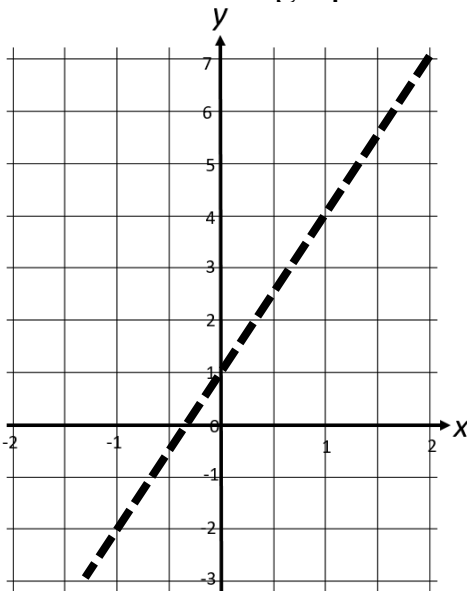
$x =$ .....  
(2 marks)

15. Show the inequality  $2x + 1 < 7$  on the number line below.



(2 marks)

16. Below is a linear graph.



(i) Write down the gradient.

.....

(ii) Write down the y intercept

.....

(iii) Write down the equation of the line.

.....

(4 marks)

Score =