

1. Here is a quadratic sequence.

$$3, 10, 21, 36, 55,$$

(i) Write down the Nth term.

$$2n^2 + n$$

.....
(3 marks)

2. Coordinate $A = (5, -3)$ and coordinate $B = (-9, -8)$.

Write down the midpoint of AB

$$(-2, -5.5)$$

.....
(2 marks)

3. Simplify $2x + 5x^2 - 7 + 3x - 7x^2 - 4$

$$5x - 2x^2 - 11$$

.....
(2 marks)

4. Simplify $6p^5 + 7p^5 - 8p^5$

$$5p^5$$

.....
(1 mark)

5. $a = 5$ $b = 3$ $c = -2$

Work out the value of $ab + 2c$

$$11$$

.....
(2 marks)

6. Simplify $6c^2d^6 \times 9c^5b$

$$54c^7b^7$$

.....
(2 marks)

7. Simplify $\frac{18m^9n^6}{3mn^{-3}}$

$$6m^8n^9$$

.....
(2 marks)

8. Simplify $(12t^{-9})^2$

$$144t^{-18}$$

.....
(2 marks)

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

$$4a^8$$

.....
(2 marks)

10. Expand $xy(7x + 5y)$

$7x^2y + 5xy^2$
.....
(2 marks)

11. Factorise $15p - 35p^2$

$5p(3 - 7p)$
.....
(2 marks)

12. Expand and simplify. $(2x + 2)(x - 5)$

$2x^2 - 8x - 10$
.....
(2 marks)

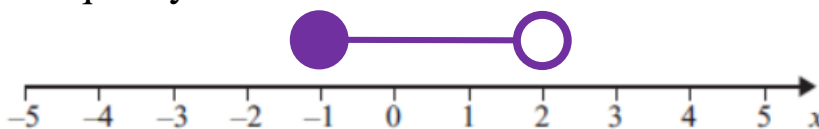
13. Factorise $2x^2 + 7x + 3$

$(2x + 1)(x + 3)$
.....
(2 marks)

14. Solve $4x - 7 = 5x - 9$

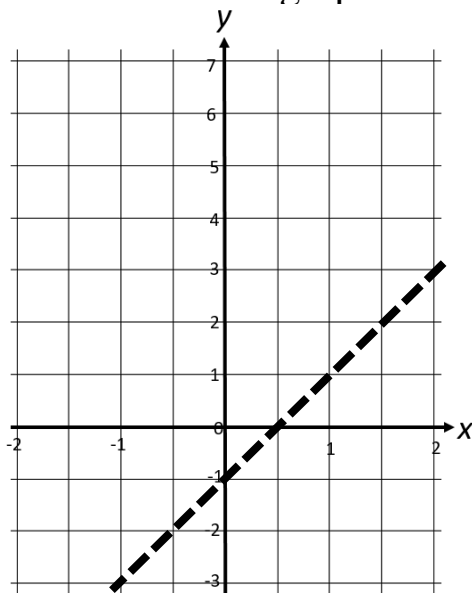
$x = \dots\dots\dots 5$
(2 marks)

15. Show the inequality $-1 \leq x < 2$ on the number line below.



(2 marks)

16. Below is a linear graph.



(i) Write down the gradient.

2
.....

(ii) Write down the y intercept

-1
.....

(iii) Write down the equation of the line.

$y = 2x - 1$
.....

(4 marks)

Score =