

1. Here is a quadratic sequence.

7, 18, 35, 58, 87,

(i) Write down the Nth term.

$2n^2 + 2n + 2$

 (3 marks)

2. Coordinate $A = (-2, 5)$ and coordinate $B = (x, y)$.

The midpoint of $AB = (7, -1)$

Write down the coordinate of B .

$(16, -7)$

 (2 marks)

3. Simplify $3x - 7x^2 + 4 - 5x - 9x^2 - 3$

$-2x - 16x^2 + 1$

 (2 marks)

4. Simplify $4x^4 - 7x^4 + 5x^4 - 8x^4$

$-6x^4$

 (1 mark)

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

Work out the value of $ab + 2c$

11

 (2 marks)

6. Simplify $3a^2bc^{-5} \times 13a^5b^3c$

$39a^7b^4c^{-4}$

 (3 marks)

7. Simplify $\frac{24d^6e^{-4}f}{4de^2f^{-2}}$

$6d^5e^{-6}f^3$

 (2 marks)

8. Simplify $(6x^{-9})^3$

$216x^{-27}$

 (2 marks)

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

$4a^8$

 (2 marks)

10. Expand $6ef(9e - 3ef)$

$547e^2f - 18e^2f^2$
.....
(2 marks)

11. Factorise $14h - 35h^2$

$7h(2 - 5h)$
.....
(2 marks)

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

$4x^2 - 4x + 1$
.....
(2 marks)

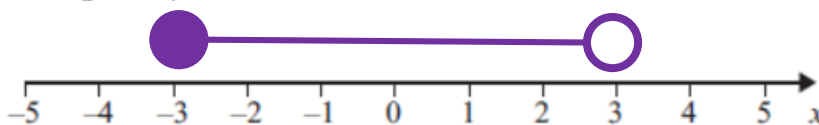
13. Factorise $3x^2 - 5x - 2$

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

14. Solve $3x - 2 = 4x + 3$

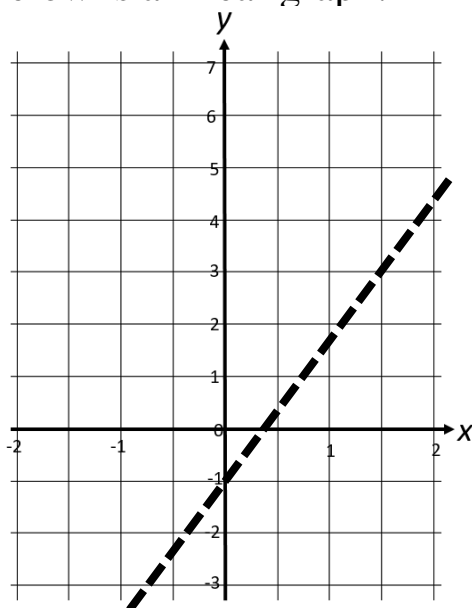
$x = \dots\dots\dots -5$
(2 marks)

15. Show the inequality $-5 \leq 2x - 1 < 7$ on the number line below.



(2 marks)

16. Below is a linear graph.



(i) Write down the gradient.

$\frac{4}{3}$
.....

(ii) Write down the y intercept

-1
.....

(iii) Write down the equation of the line.

$y = \frac{4}{3}x - 1$
.....

(4 marks)

Score =