1. Here is a quadratic sequence.

$$5, 14, 27, 44, 65,$$

  (i)   Write down the Nth term.

$2n^2 + 3n$
....
(3 marks)

2. Coordinate $A = (7, 3)$ and coordinate $B = (x, y)$.
The midpoint of $AB = (11, 7)$
Write down the coordinate of B.

$(15, 11)$
....
(2 marks)

3. Simplify $-2a^2 + 5 - 10a + 7 - a^2 + 6a$

$-4a - 3a^2 + 12$
....
(2 marks)

4. Simplify $8m^3 - 5m^3 + 7m^3$

$10m^3$
....
(1 mark)

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

  Work out the value of $ab + 2c$

11
....
(2 marks)

6. Simplify $7p^6q^{-2} \times 7p^3q^5$

$49p^9q^3$
....
(2 marks)

7. Simplify $\dfrac{36d^{-4}e^{10}}{9d^6e^4}$

$4d^{-10}e^6$
....
(2 marks)

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

$125t^{-18}$
....
(2 marks)

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

$4a^8$
....
(2 marks)

10. Expand $2ab(6a - 4b)$

$12a^2b - 8ab^2$
....
(2 marks)

11. Factorise $9y^2 + 24y$

$3y(3y + 8)$
....
(2 marks)

12. Expand and simplify. $(2x + 1)(2x + 3)$

$4x^2 + 8x + 3$
....
(2 marks)

13. Factorise $2x^2 - 7x - 4$

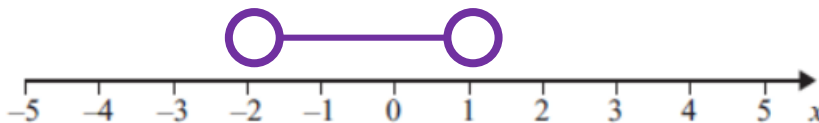$(2x + 1)(x - 4)$
....
(2 marks)

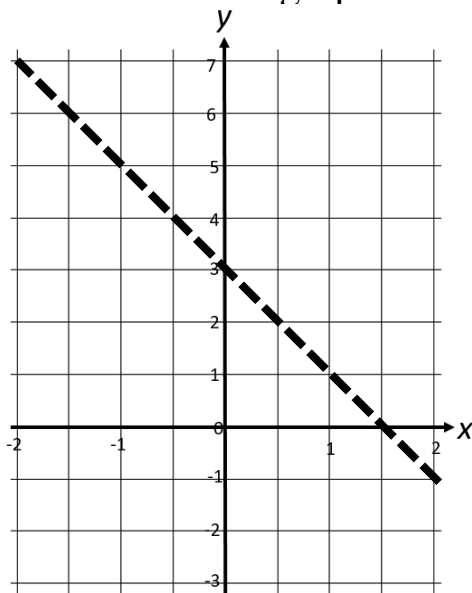14. Solve $4x + 1 = 6x + 7$

$x =$.............. -3
(2 marks)

15. Show the inequality $1 < x + 3 < 4$ on the number line below.

(2 marks)

16. Below is a linear graph.

(i)   Write down the gradient.

-1
....

(ii) Write down the y intercept

3
....

(iii) Write down the equation of the line.

$y = -x + 3$
....

(4 marks)

Score =