

1. Here is an arithmetic sequence.

$$-1, 3, 7, 11, 15,$$

(i) Write down the Nth term.

$$4n - 5$$

(ii) What is the 40th term in the sequence?

$$155$$

(3 marks)

2. Coordinate $A = (9, 7)$ and coordinate $B = (-4, 11)$.

Write down the midpoint of AB

$$(2.5, 9)$$

(2 marks)

3. Simplify $2c - 10 + 3d - 5c + 4 + 6d$

$$-3c + 9d - 6$$

(2 marks)

4. Simplify $4h^2 + 3h^2 + 5h^2$

$$12h^2$$

(1 mark)

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

Work out the value of $ab + 2c$

$$11$$

(2 marks)

6. Simplify $9y^{-3} \times 4y^2$

$$36y^{-1}$$

(2 marks)

7. Simplify $\frac{24e^{-4}}{4e^4}$

$$6e^{-8}$$

(2 marks)

8. Simplify $(7y^{-2})^2$

$$49y^{-4}$$

(2 marks)

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

$$4a^8$$

(2 marks)

10. Expand $a(3a + 5)$

$a^2 + 5a$

(1 mark)

11. Factorise $x^2 + 9$

$x(x + 9)$

(2 marks)

12. Expand and simplify. $(2x + 1)(x + 5)$

$2x^2 + 11x + 5$

(2 marks)

13. Factorise $x^2 + 7x + 12$

$(x + 4)(x + 3)$

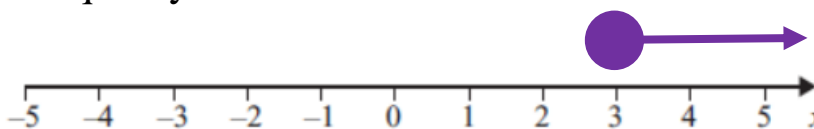
(2 marks)

14. Solve $4x + 15 = 9x - 10$

$x = 5$

(2 marks)

15. Show the inequality $x - 3 \geq 0$ on the number line below.

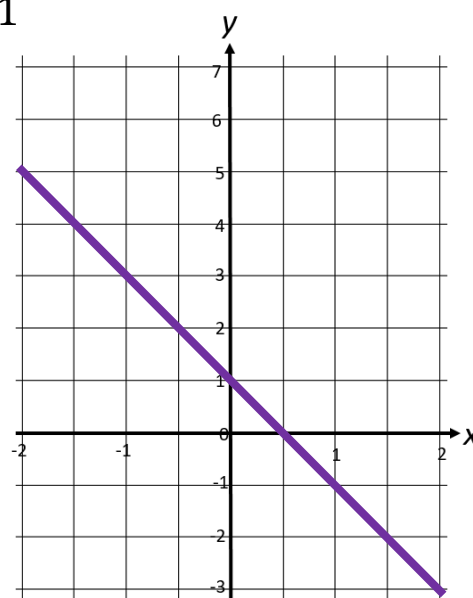


(2 marks)

16. Complete the table of values for $y = -2x + 1$

x	-2	-1	0	1	2
y	5	3	1	-1	-3

On the grid draw the graph of $y = 2x + 1$



(4 marks)

Score =