

1. Here is an arithmetic sequence.

$$1, 7, 13, 19, 25,$$

(i) Write down the Nth term.

$$6n - 5$$

(ii) What is the 30<sup>th</sup> term in the sequence?

$$175$$

(3 marks)

2. Coordinate  $A = (-2, 5)$  and coordinate  $B = (8, 7)$ .

Write down the midpoint of  $AB$

$$(3, 6)$$

(2 marks)

3. Simplify  $6x + 3y - 5 + x - 10y - 2$

$$7x - 7y - 7$$

(2 marks)

4. Simplify  $2m^3 + 6m^3$

$$8m^3$$

(1 mark)

5.  $a = 5$     $b = 3$     $c = -2$

Work out the value of  $ab + 2c$

$$11$$

(2 marks)

6. Simplify  $6n^7 \times 8n^{-2}$

$$48n^5$$

(2 marks)

7. Simplify  $\frac{24h^{10}}{3h^{-2}}$

$$8h^{12}$$

(2 marks)

8. Simplify  $(10q^{-3})^2$

$$100q^{-6}$$

(2 marks)

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

$$4a^8$$

(2 marks)

10. Expand  $8(5 - 6y)$

$40 - 48y$

(1 mark)

11. Factorise  $12f - 15$

$3(4f - 5)$

(2 marks)

12. Expand and simplify.  $(x - 6)(x - 5)$

$x^2 - 11x + 30$

(2 marks)

13. Factorise  $100 - a^2$

$(10 + a)(10 - a)$

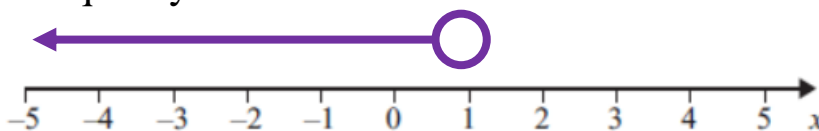
(2 marks)

14. Solve  $8x + 5 = 6x + 11$

$x = 3$

(2 marks)

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

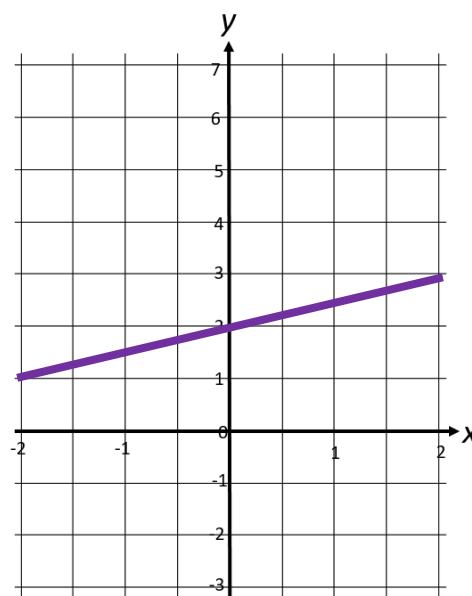


(1 mark)

16. Complete the table of values for  $y = \frac{1}{2}x + 2$

$x$	-2	-1	0	1	2
$y$	1	1.5	2	2.5	3

On the grid draw the graph of  $y = \frac{1}{2}x + 2$



(4 marks)

Score =