

1. Here is an arithmetic sequence.

$$7, 12, 17, 22, 27,$$

(i) Write down the Nth term.

$$5n + 2$$

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

$$152$$

(3 marks)

2. Coordinate  $A = (7, 8)$  and coordinate  $B = (1, 16)$ .

Write down the midpoint of  $AB$

$$(4, 12)$$

(2 marks)

3. Simplify  $4b + 7c + 8 - b + 6c + 13$

$$3b + 13c + 21$$

(2 marks)

4. Simplify  $a^2 + a^2$

$$2a^2$$

(1 mark)

5.  $a = 5$     $b = 3$     $c = -2$

Work out the value of  $ab + 2c$

$$11$$

(2 marks)

6. Simplify  $4h^2 \times 3h^5$

$$12h^7$$

(2 marks)

7. Simplify  $\frac{10e^{12}}{2e^2}$

$$5e^{10}$$

(2 marks)

8. Simplify  $(3t^5)^2$

$$9t^{10}$$

(2 marks)

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

$$4a^8$$

(2 marks)

10. Expand  $4(7y + 6)$

$28y + 24$   
.....  
(1 mark)

11. Factorise  $10p + 8$

$2(5p + 4)$   
.....  
(2 marks)

12. Expand and simplify.  $(x + 5)(x + 7)$

$x^2 + 12x + 35$   
.....  
(2 marks)

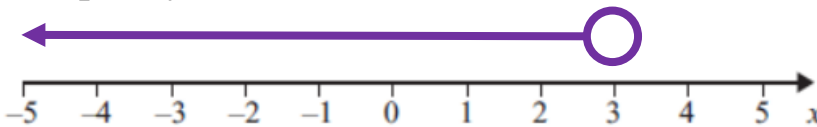
13. Factorise  $y^2 - 16$

$(y + 4)(y - 4)$   
.....  
(2 marks)

14. Solve  $3x + 2 = 17$

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

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

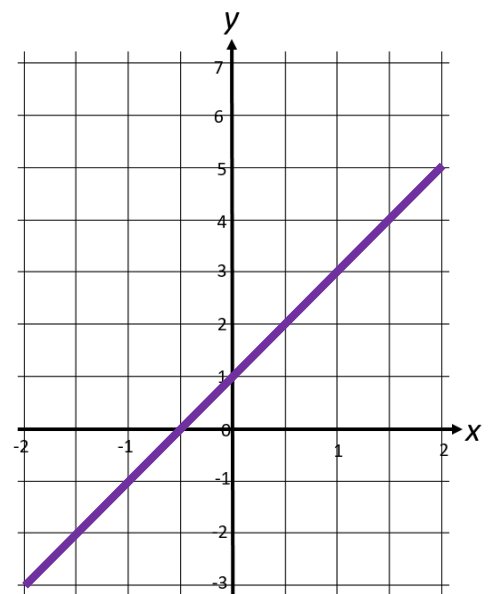


(1 mark)

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

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

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



(4 marks)

Score =