Higher Homework 13 : Algebra

1. Here is an arithmetic sequence.

$$3\,,7\,,11\,,15\,,19\,,$$

(i) Write down the Nth term.

$4n-1$

(ii) What is the 50th term in the sequence?

199

(3 marks)

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2. Coordinate A = (9 , 5) and coordinate B = (7 , 13).

Write down the midpoint of AB

(8 , 9)

(2 marks)

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3. Simplify $5t-3+4u-6+4t-u$

$9t+3u-9$

(2 marks)

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4. Simplify $4y^2+6y^2$

$10y^2$

(1 mark)

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

Work out the value of $ab+2c$

11

(2 marks)

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6. Simplify $7p^6\times 3p^6$

$21p^{12}$

(2 marks)

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7. Simplify $\dfrac{16g^{15}}{4g^5}$

$4g^{10}$

(2 marks)

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8. Simplify $(6e^8)^2$

$36e^{16}$

(2 marks)

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

$4a^8$

(2 marks)

Higher Homework 13 : Algebra

10. Expand $6(3 + 8m)$

$18 + 48m$

(1 mark)

11. Factorise $12e - 6$

$6(2e - 1)$

(2 marks)

12. Expand and simplify. $(x + 2)(x - 9)$

$x^2 - 7x - 18$

(2 marks)

13. Factorise $9 - x^2$

$(3 + x)(3 - x)$

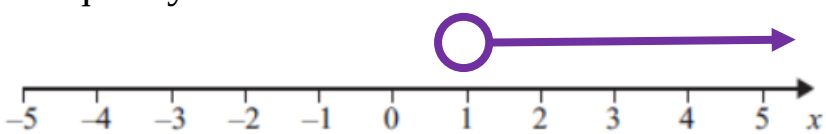
(2 marks)

14. Solve $2x + 2 = x + 12$

$x =$ 10

(2 marks)

15. Show the inequality $x > 1$ on the number line below.

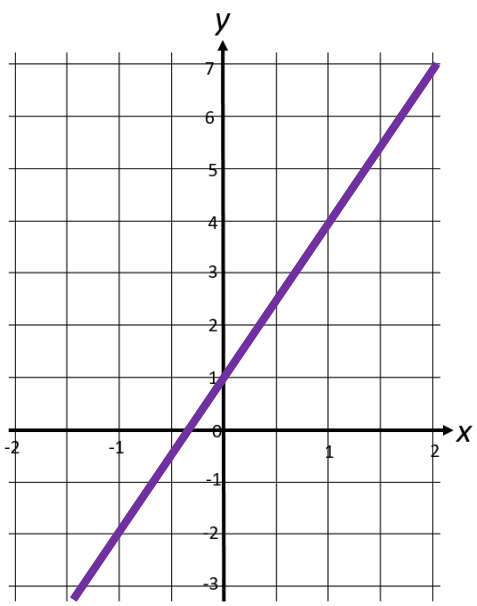


(1 mark)

16. Complete the table of values for $y = 3x + 1$

x	-2	-1	0	1	2
y	-5	-2	1	4	7

On the grid draw the graph of $y = 3x + 1$



(4 marks)

Score =