

# Algebra Review

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## Question 1

Simplify

$$n + n + n + n + n$$

.....

**(1 mark)**

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## Question 2

Multiply out

$$4(y + 9)$$

.....

**(1 mark)**

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## Question 3

Simplify fully

$$7a + 3a - 4a$$

.....

**(1 mark)**

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## Question 4

Multiply out

$$6(n - 2)$$

.....  
**(1 mark)**

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### Question 5

$$a = 5b = 3$$

Work out the value of  $4a + 2b$

.....  
**(2 marks)**

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### Question 6

(a) Simplify

$$4p \times 5q$$

.....  
**(1 mark)**

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### Question 7

Expand

$$3(2y - 5)$$

.....  
**(1 mark)**

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**Question 8**

Ben is  $n$  years old.

Colin is three years younger than Ben.

Write down an expression, in terms of  $n$ , for Colin's age.

.....

**(1 mark)**

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**Question 9**

Simplify:

$$\frac{15d}{5}$$

.....

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**Question 10**

Expand

$$x(x + 2)$$

.....

**(2 marks)**

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**Question 11**

Simplify:

$$6x \times 2x$$

.....

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**Question 12**

Bob has twice as much money as Charles, who has  $c$  euros.

Give an expression for how much money Bob has.

Euros: .....

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**Question 13**

Simplify:

$$7x + 2y + x + 5y$$

.....

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**Question 14**

Simplify:

$$\frac{8a^6}{2a^3}$$

.....

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**Question 15**

Expand

$$2m(m + 3)$$

.....  
(1 mark)

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### Question 16

Work out the value of  $\frac{p+7}{3}$  when  $p = 2$ .

.....  
(1 mark)

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### Question 17

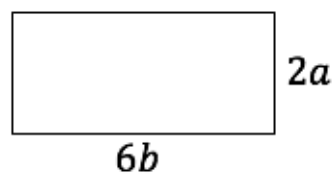
I think of a number  $x$ , triple my number then take away 2. Give an expression for my new number.

.....  

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### Question 18

Find a simplified expression for the area of the rectangle drawn below.



.....  

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### Question 19

Simplify

$$5x + 4y + x - 7y$$

.....  
(2 marks)

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### Question 20

Compasses cost  $c$  pence each.

Rulers cost  $r$  pence each.

Write down an expression for the total cost, in pence, of 2 compasses and 4 rulers.

.....  
(2 marks)

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### Question 21

Expand the brackets and collect like terms

$$4(x + 3) + 6(5x + 2)$$

.....

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### Question 22

Simplify

$$4p^3q^5 \times 6p^2q$$

.....  
(2 marks)

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**Question 23**

Expand and simplify

$$3(c - 7) + 2(3c + 4)$$

.....

**(2 marks)****Question 24**

Simplify

$$\frac{32q^9r^4}{4q^3r}$$

.....

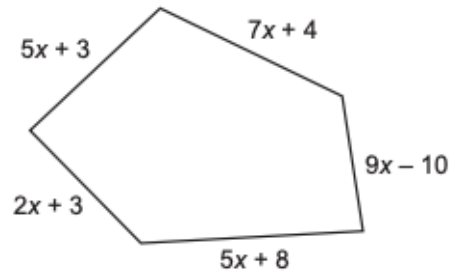
**(2 marks)****Question 25**

$$C = 5a + 4d$$

Work out the value of  $C$  when  $a = -3$  and  $d = 6$  $C = \dots\dots\dots$ **(2 marks)****Question 26**

The perimeter of the pentagon is equal to the perimeter of the square.

Not to scale



Find an expression for the length of one side of the square.  
Give your answer in terms of  $x$  in its simplest form.

.....

**(4 marks)**

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### Question 27

$$P = 5g + h^2$$

Find the value of  $P$  when  $g = 3$  and  $h = -4$

$P = \dots\dots\dots$

**(2 marks)**

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### Question 28

Expand and simplify  $4(2d + 3) - 2(3d - 5)$

.....

**(2 marks)**

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## Answers

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### Question 1

$$5n$$

$$5n \quad | \quad \text{B1} \quad | \quad \text{for } 5n$$

### Question 2

$$4y + 36$$

$$4y + 36 \quad | \quad \text{B1}$$

### Question 3

$$6a$$

$$6a \quad | \quad \text{B1} \quad | \quad \text{Accept } 6 \times a \text{ or } a \times 6 \text{ but not } a6$$

### Question 4

$$6n - 12$$

$$6n - 12 \quad | \quad 1 \quad | \quad \text{B1}$$

### Question 5

$$26$$

$$26 \quad | \quad 2 \quad | \quad \begin{array}{l} \text{M1 for correct substitution into expression } 4 \times 5 + 2 \times 3 \\ \text{A1 cao} \end{array}$$

### Question 6

$$20pq$$

$$20pq \quad | \quad 1 \quad | \quad \text{B1 for } 20pq \text{ oe}$$

### Question 7

$$6y - 15$$

$$6y - 15 \quad | \quad 1 \quad | \quad \text{B1 cao}$$

### Question 8

$$n - 3$$

$$n - 3 \quad | \quad 1 \quad | \quad \text{B1 for } n - 3 \text{ or } 1n - 3 \text{ or } -3 + n \text{ (condone use of N)}$$

**Question 9** $3d$ **Question 10**

$x^2 + 2x$

$x^2 + 2x$

2

M1 for  $x \times x + x \times 2$  or two term expression including  
 $x \times x (= x^2)$  or  $x \times 2 (= 2x)$   
 A1 cao

**Question 11**

$12x^2$

By the commutative law,

$$6x \times 2x \equiv 6 \times 2 \times x \times x$$

$$\equiv 12x^2$$

**Question 12**Euros:  $2c$ **Question 13**

$8x + 7y$

**Question 14**

$4a^3$

**Question 15**

$2m^2 + 6m$

$2m^2 + 6m$

1

B1 cao

**Question 16**

3

3

| 1

**Question 17**

$3x - 2$

**Question 18**

$12ab$

The area of the rectangle is  $6b \times 2a$

By the commutative law,  $6b \times 2a \equiv 6 \times 2 \times b \times a$

$$\equiv 12ab$$

### Question 19

$$6x - 3y$$

$6x - 3y$	2	M1 for an attempt to combine terms in $x$ or terms in $y$ correctly eg $5x + x (= 6x)$ , $4y - 7y (= -3y)$ A1 for $6x - 3y$ oe
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### Question 20

$$2c + 4r$$

$2c + 4r$	2	B2 for $2c + 4r$ oe [B1 for $2c$ or $4r$ oe seen] Ignore any Left Hand Side = $2c + 4r$ {Note: ignore units or use of 'p'}
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### Question 21

$$34x + 24$$

### Question 22

$$24p^5q^6$$

$24p^5q^6$	2	B2 B1 for 2 of 24, $p^5$ , $q^6$ correct in a single product with no additional terms or $24p^{3+2}q^{5+1}$
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### Question 23

$$9c - 13$$

$3c - 21 + 6c + 8$		$9c - 13$	2	M1 A1	For 3 or 4 terms correct
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### Question 24

$$8q^6r^3$$

$8q^6r^3$	B2	cao
	(B1	for 2 of 3 terms correct in a single product)

### Question 25

$$C = 9$$

$5 \times -3 + 4 \times 6$ or for $-15$ or $(+)24$		9	2	M1 A1	oe
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