

**SIMPLIFYING ALGEBRA**

**Pearson Edexcel - Thursday 4 June 2020 - Paper 2 (Calculator) Foundation Tier**

1.

**3** Simplify  $3e - e + 4e$

.....  
**(Total for Question 3 is 1 mark)**

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**Pearson Edexcel - Monday 8 June 2020 - Paper 3 (Calculator) Foundation Tier**

2.

**14** (a) Simplify  $3x + 5y + 2x - 4y$

.....  
(2)

(b) Solve  $5p + 7 = 22$

$p =$  .....  
(2)

**(Total for Question 14 is 4 marks)**

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Pearson Edexcel - Thursday 6 June 2019 - Paper 2 (Calculator) Foundation Tier

3.

8 (a) Simplify  $a \times b \times 7$

.....  
(1)

(b) Simplify  $y \times y \times y$

.....  
(1)

(c) Simplify fully  $\frac{e \times e \times e \times f}{e \times e \times f \times f}$

.....  
(2)

.....  
**(Total for Question 8 is 4 marks)**

Pearson Edexcel - Tuesday 11 June 2019 - Paper 3 (Calculator) Foundation Tier

4.

9 Simplify  $4e + 6f + 7e - f$

.....  
**(Total for Question 9 is 2 marks)**

**Pearson Edexcel - Thursday 8 November 2018 - Paper 2 (Calculator) Foundation Tier**

5.

7 (a) Simplify  $3m - m - m + 3m$

.....  
(1)

(b) Simplify  $2 \times n \times p \times 4$

.....  
(1)

.....  
**(Total for Question 7 is 2 marks)**  
.....

**Pearson Edexcel - Thursday 24 May 2018 - Paper 1 (Non-Calculator) Foundation Tier**

6.

6 (a) Simplify  $3 \times 4t$

.....  
(1)

(b) Simplify  $8a - 3a + 2a$

.....  
(1)

.....  
**(Total for Question 6 is 2 marks)**  
.....

Pearson Edexcel - Monday 6 November 2017 - Paper 2 (Calculator) Foundation Tier

7.

3 (a) Simplify  $3f \times 5g$

.....  
(1)

(b) Simplify  $t \times t$

.....  
(1)

(c) Simplify  $\frac{2n + 6n}{2}$

.....  
(1)

.....  
**(Total for Question 3 is 3 marks)**  
.....

Pearson Edexcel - Wednesday 8 November 2017 - Paper 3 (Calculator) Foundation Tier

8.

2 Simplify  $y + 3y - 2y$

.....  
**(Total for Question 2 is 1 mark)**  
.....

Pearson Edexcel – Specimen 2 - Paper 1 (Non-Calculator) Foundation Tier

9.

19 (a) Factorise  $y^2 + 27y$

.....  
(1)

(b) Simplify  $(t^3)^2$

.....  
(1)

(c) Simplify  $\frac{w^9}{w^4}$

.....  
(1)

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**(Total for Question 19 is 3 marks)**

**Pearson Edexcel – Specimen 2 - Paper 2 (Calculator) Foundation Tier**

10.

17 (a) Simplify  $7x + 2y - 3x + 4y$

.....  
(2)

(b) Factorise  $10x - 15$

.....  
(1)

(c) Solve  $5p = 3p + 8$

$p =$  .....  
(2)

---

**(Total for Question 17 is 5 marks)**

11.

24 (a) Expand and simplify  $3(y - 2) + 5(2y + 1)$

.....  
(2)

(b) Simplify  $5u^2w^4 \times 7uw^3$

.....  
(2)

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(Total for Question 24 is 4 marks)

**Pearson Edexcel – Specimen 1 - Paper 2 (Calculator) Foundation Tier**

12.

4 (a) Simplify  $5f - f + 2f$

.....  
(1)

(b) Simplify  $2 \times m \times n \times 8$

.....  
(1)

(c) Simplify  $t^2 + t^2$

.....  
(1)

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(Total for Question 4 is 3 marks)

13.

16 (a) Solve  $4c + 5 = 11$

$c = \dots\dots\dots$   
(2)

(b) Solve  $5(e + 7) = 20$

$e = \dots\dots\dots$   
(2)

(c) Simplify  $(m^3)^2$

$\dots\dots\dots$   
(1)

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(Total for Question 16 is 5 marks)



**Pearson Edexcel – Specimen 1 - Paper 3 (Calculator) Foundation Tier**

14.

7 (a) Solve  $f + 2f + f = 20$

$f = \dots\dots\dots$   
(1)

(b) Solve  $18 - m = 6$

$m = \dots\dots\dots$   
(1)

(c) Simplify  $d^2 \times d^3$

$\dots\dots\dots$   
(1)

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**(Total for Question 7 is 3 marks)**

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**OCR Thursday 05 November 2020- Morning (Non-Calculator) Foundation Tier**

15.

15 (a) Simplify.

$4a - 2b - 2a + 5b$

(a)  $\dots\dots\dots$  [2]

(b) (i) Multiply out.

$4(x + 3)$

(b)(i)  $\dots\dots\dots$  [1]

(ii) Multiply out and simplify.

$(x + 5)(x - 2)$

OCR Tuesday 5 November 2019 – Morning (Calculator) Foundation Tier

16.

5 Simplify.

(a)  $4a + 5a - 7a$

(a) ..... [1]

(b)  $3g - 2f + 8g + 5f$

OCR Thursday 07 November 2019- Morning (Non-Calculator) Foundation Tier [2]

17.

16 Martina has answered some questions on algebra.  
In each question, she has made an error.

Describe her error and give the correct answer to each problem.

(a) Question 1 Simplify.  $2a \times a \times a$

Martina's answer  $4a$

Martina's error is .....

.....

Correct answer = ..... [2]

(b) Question 2 Simplify.  $\frac{x^{10}}{x^2}$

Martina's answer  $x^5$

Martina's error is .....

.....

Correct answer = ..... [2]

(c) Question 3  $s = ut + \frac{1}{2}at^2$

Find  $s$  when  $u = 0$ ,  $t = 5$  and  $a = 6$ .

Martina's solution  $s = 0 \times 5 + \frac{1}{2} \times 6 \times 5^2$

$$s = 0 + 15^2$$

$$s = 225$$

OCR Thursday 6 June 2019 – Morning (Non-Calculator) Foundation Tier

18.

10 (a) Simplify fully.

(i)  $3t + 5u - 2t + 3u$

(a)(i) ..... [2]

(ii)  $6a \times 2a^2$

(ii) ..... [2]

(b) Make  $x$  the subject of the formula  $y = x^2 - 1$ .

(b) ..... [2]

OCR Tuesday 11 June 2019 – Morning (Calculator) Foundation Tier

19.

28 (a) Simplify.

(i)  $h^3 \times h^{-3}$

(a) (i) ..... [1]

(ii)  $\frac{f^9}{f^3}$

(ii) ..... [1]

(b) The length of each side of a plastic cube is  $2a$  millimetres.  
The cube has mass  $32a^2$  grams.

Find an expression for the density of the cube in its simplest form.  
Give the units of your answer.

(b) density = .....

units ..... [5]

OCR Thursday 8 November 2018 – Morning (Non-Calculator) Foundation Tier

20.

15 (a) Multiply out.

$$(3x - 2y)(x + y)$$

Give your answer in its simplest form.

(a) ..... [3]

(b)  $3(2x + d) + c(x + 5) = 10x + 17$

Work out the value of  $c$  and the value of  $d$ .

(b)  $c =$  .....  
 $d =$  ..... [5]

(c) Solve by factorising.

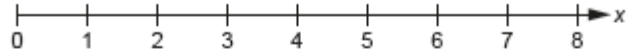
$$x^2 - 7x + 10 = 0$$

(c)  $x =$  ..... or  $x =$  ..... [3]

OCR Monday 12 November 2018 – Morning (Calculator) Foundation Tier

21.

7 (a) Show the inequality  $x > 3$  on this number line.



[2]

(b) Simplify.

$$4a + 3c + 7a - 5c$$

(b) ..... [2]

(c) Solve.

$$\frac{2x}{3} = 4$$

(c)  $x =$  ..... [2]

OCR Thursday 7 June 2018 – Morning (Non-Calculator) Foundation Tier

22.

4 (a) Simplify.

(i)  $5x - 6y - x + 3y$

(a)(i) ..... [2]

(ii)  $w^8 \div w^2$

(ii) ..... [1]

(iii)  $5c^2d \times 3c$

(iii) ..... [1]

(b) Work out the value of

(i)  $4x - 7$  when  $x = 5$ ,

(b)(i) ..... [1]

(ii)  $\frac{p+7}{3}$  when  $p = 2$ .

(ii) ..... [1]

OCR Thursday 2 November 2017– Morning (Calculator) Foundation Tier

23.

6 (a) Simplify.

(i)  $2p + 5p - 3p$

(a)(i) ..... [1]

(ii)  $6j + 3k - j - 5k$

(ii) ..... [2]

(b) Find the value of  $10h + 6t$  when  $h = 12$  and  $t = 4$ .

(b) ..... [2]

(c) Rearrange this formula to make  $d$  the subject.

$$e = f - 7d$$

(c) ..... [2]



OCR Monday 6 November 2017– Morning (Calculator) Foundation Tier

24.

6 (a) Simplify fully.

(i)  $4(c + 2d) + 3(3c - 5d)$

(a)(i) ..... [3]

(ii)  $4a \times 5b$

(ii) ..... [1]

(b) Factorise fully.

(i)  $6g + 8h$

(b)(i) ..... [1]

(ii)  $5x^2 - 15x$

(ii) ..... [2]

25.

23 (a)  $n$  is an integer.

(i) Explain why  $2n + 1$  is an odd number.

.....  
..... [1]

(ii) Write down an algebraic expression for the next odd number after  $2n + 1$ .

(a)(ii) ..... [1]

(b) Use algebra to show that the sum of two consecutive odd numbers will always be a multiple of 4. [2]

**Pearson Edexcel – Sample Papers - Paper 1 (Non-Calculator) Foundation Tier**

26.

22 Expand and simplify  $(m + 7)(m + 3)$

.....  
**(Total for Question 22 is 2 marks)**

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**Pearson Edexcel – Sample Papers - Paper 3 (Calculator) Foundation Tier**

27.

2 (a) Simplify  $8x - 3x + 2x$

.....  
(1)

(b) Simplify  $4y \times 2y$

.....  
(1)

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**(Total for Question 2 is 2 marks)**

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OCR Thursday 25 May 2017 – Morning (Calculator) Foundation Tier

28.

7 (a) Simplify.

$$7t - 6u + 5t - 4u$$

(a) ..... [2]

(b) Factorise.

$$5v + 20w$$

(b) ..... [1]

(c) Solve by factorising.

$$x^2 + 10x + 21 = 0$$

(c)  $x = \dots\dots\dots$  or  $x = \dots\dots\dots$  [3]

OCR Thursday 8 June 2017 – Morning (Non - Calculator) Foundation Tier

29.

5 (a) Multiply out.

$$3x(x + 2y)$$

(a) ..... [2]

(b) Solve.

(i)  $7x = 28$

(b)(i)  $x =$  ..... [1]

(ii)  $\frac{x}{3} - 2 = 9$

(ii)  $x =$  ..... [2]

30.

14 (a) Solve  $6x - 11 = 13$

[2 marks]

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$x =$  \_\_\_\_\_

14 (b) Simplify fully  $(2 \times 4a) + 9 + \frac{15a}{3} - 7$

[3 marks]

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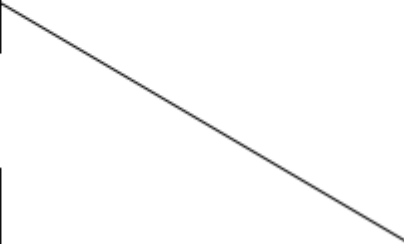
Answer \_\_\_\_\_

31.

- 12 Match each expression on the left with one on the right.  
One has been done for you.

[4 marks]

$12ab \div 4$	$4ab$
$a + a + a + a$	$4 + a$
$4 \times a \times b$	$3ab$
$a \times a \times a \times a$	$4a$
$a + a + b + b$	$a^4$
	$2ab$
	$2a + 2b$

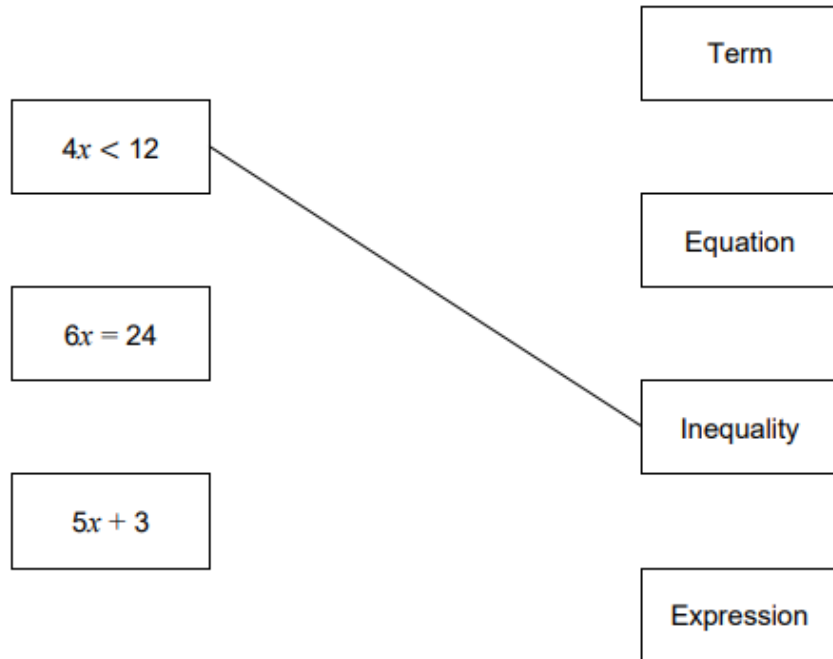


AQA Monday 8 June 2020 – Morning (Calculator) Foundation Tier

32.

- 7 Match the algebra to the correct description.  
One has been done for you.

[2 marks]





AQA Tuesday 21 May 2019 – Morning (Non-Calculator) Foundation Tier

33.

28 Multiply out and simplify  $(x + 5)(x - 1)$

[2 marks]

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Answer \_\_\_\_\_

AQA Tuesday 6 November 2018 – Morning (Non-Calculator) Foundation Tier

34.

23 Two consecutive whole numbers are  $n$  and  $n + 1$

23 (a) Simplify  $n - (n + 1)$

[1 mark]

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Answer \_\_\_\_\_

23 (b) Multiply out  $n(n + 1)$

[1 mark]

Answer \_\_\_\_\_

23 (c) The two numbers are added.

Show that the answer must be an odd number.

[2 marks]

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**AQA Thursday 8 November 2018 – Morning (Calculator) Foundation Tier**

35.

- 3** Simplify  $8x - 3 + 6x$   
Circle your answer.

**[1 mark]**

$2x - 3$

$11x$

$5 + 6x$

$14x - 3$

**AQA Thursday 24 May 2018 – Morning (Non-Calculator) Foundation Tier**

36.

- 3** Simplify  $3 \times a \times 3 \times a$   
Circle your answer.

**[1 mark]**

$9a$

$6a^2$

$9a^2$

$6a$

**AQA Thursday 7 June 2018 – Morning (Calculator) Foundation Tier**

37.

- 1** Circle the expression that can be written as  $2y$

**[1 mark]**

$y + y$

$y^2$

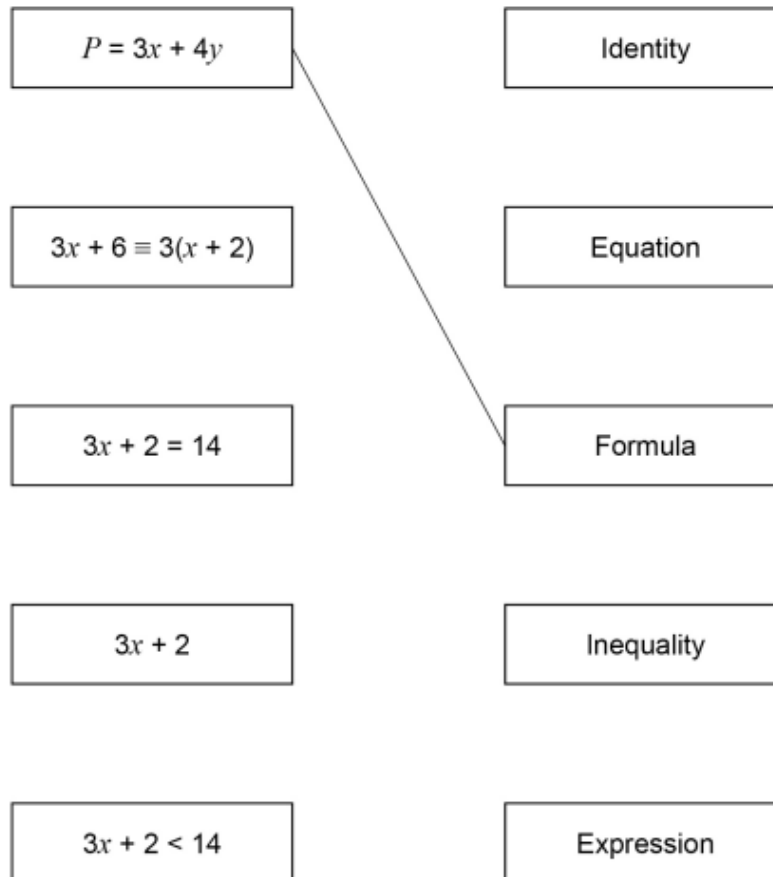
$2 + y$

$y \times y$

38.

- 7 Link the algebra to the correct description.  
One has been done for you.

[3 marks]



AQA Tuesday 12 June 2018 – Morning (Calculator) Foundation Tier

39.

17 Simplify  $7x - (3x - 2x)$

Circle your answer.

[1 mark]

$7x - 1$

$2x$

$6x$

$8x$

AQA Monday 6 November 2017 – Morning (Calculator) Foundation Tier

40.

5 (a) Simplify  $y \times y$

[1 mark]

Answer \_\_\_\_\_

5 (b) Simplify  $5a + 2 - a + 9$

[2 marks]

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Answer \_\_\_\_\_

AQA Thursday 25 May 2017– Morning (Non-Calculator) Foundation Tier

41.

17 Circle the expression which does **not** simplify to  $y^3$

[1 mark]

$$y \times y \times y$$

$$y^4 \div y$$

$$y^2 \times y$$

$$y^6 \div y^2$$

AQA Tuesday 13 June 2017 Morning– Morning (Calculator) Foundation Tier

42.

**5 (a)** Simplify  $a \times a \times a + b + b$

**[2 marks]**

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Answer \_\_\_\_\_

**5 (b)** Simplify  $5(x + 3) - x + 2$

**[3 marks]**

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Answer \_\_\_\_\_

AQA Sample Paper 1– Morning (Non-Calculator) Foundation Tier

43.

**4** Simplify  $5a - (2a + 6)$

Circle your answer.

**[1 mark]**

$3a + 6$

$9a$

$-3a$

$3a - 6$

AQA Sample Paper 2– Morning (Calculator) Foundation Tier

44.

**8 (a)** Solve  $5w - 11 = 24$

**[2 marks]**

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$w =$  \_\_\_\_\_

**8 (b)** Write an expression for the total cost, in pounds, of

$x$  jumpers at £15 each  
and  
 $y$  shirts at £12 each.

**[1 mark]**

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Answer \_\_\_\_\_

**8 (c)** Simplify  $x + x + y \times y$

**[1 mark]**

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Answer \_\_\_\_\_