

# Simplify/Expand/Factorise

## Question Paper 2

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Topic	Equations, Formulae and Identities
Sub Topic	Simplify/Expand/Factorise(Algebraic manipulation)
Booklet	Question Paper 2

**Time Allowed:** 56 minutes

**Score:** /46

**Percentage:** /100

**Grade Boundaries:**

9	8	7	6	5	4	3	2	1
>90%	80%	70%	60%	50%	40%	30%	20%	10%

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1 (a) Simplify  $k \times k \times k \times k \times k$

.....  
(1)

(b) Expand  $2(7t - 3)$

.....  
(1)

(c) Expand and simplify fully

(i)  $4(2y + 6) - 3(2y - 7)$

.....  
(4)

(ii)  $(x - 6)(x - 4)$

.....  
(4)

(d) Simplify fully  $\frac{v^4 \times v^7}{v^5}$

.....  
(2)

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**(Total for Question 1 is 8 marks)**

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2 Factorise fully  $4(x - 5)^2 + 3(x - 5)$

.....  

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

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3 (a) Simplify  $8d \times 7d$

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

(b) Expand  $4(3e - 5)$

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

(c) Factorise  $f^2 - 2f$

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

(d)  $H = g^3 + 6g$   
Work out the value of  $H$  when  $g = 2$

$H =$  .....  
**(2)**

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**(Total for Question 3 is 6 marks)**

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4 (a) Factorise  $7dg - 9de$

.....  
(2)

(b) Expand and simplify  $(x + 2)(x + 5)$

.....  
(2)

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

**5** (a) Show that

$$(a^2 + 1)(c^2 + 1) = (ac - 1)^2 + (a + c)^2$$

(3)

(b) By finding suitable values of  $a$  and  $c$ , use part (a) to write 650065 as the sum of two square numbers.

$$650065 = \dots\dots\dots + \dots\dots\dots$$

(3)

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**(Total for Question 5 is 6 marks)**

**6** (a) Factorise  $14x - 35$

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

(b) Expand and simplify  $3(2c - 5) - 2(c - 4)$

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

(c) Simplify  $(4e^3)^2$

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

(d) Expand and simplify  $(a + 5)(2a - 1)$

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

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**(Total for Question 6 is 7 marks)**

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7 (a) Factorise  $6w + 15$

.....  
(1)

(b) Expand and simplify  $(x + 4)(x + 7)$

.....  
(2)

(c) Solve  $3(x - 5) = 7x + 12$   
Show clear algebraic working.

$x =$  .....  
(3)

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**(Total for Question 7 is 6 marks)**

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8  $t^n = \frac{1}{t^3}$

(a) Write down the value of  $n$ .

$n = \dots\dots\dots$   
(1)

(b) Simplify  $\frac{6xy^5}{3xy^2}$

$\dots\dots\dots$   
(2)

(c) Expand and simplify  $(3x - 2y)(x + 2y)$

$\dots\dots\dots$   
(2)

(d) Factorise  $4x^2 - 7x - 2$

$\dots\dots\dots$   
(2)

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**(Total for Question 8 is 7 marks)**