

Expanding Brackets

For AQA Level 2 Certificate in Further Mathematics (8365)

Name _____

Total marks: **30**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator.

1 Expand and simplify

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

[2 marks]

Answer _____

(b) $(x^2 - 4y)(3x + 2y)$

[2 marks]

Answer _____

2 Circle the expansion of $(3 - 2x)^2$

[1 mark]

$9 - 4x^2$

$9 + 4x^2$

$9 - 6x + 4x^2$

$9 - 12x + 4x^2$

3 Expand and simplify $(2x^2 + x - 4)(3x - 2)$

[3 marks]

Answer _____

4 Expand and simplify fully

(a) $(5 - 2x)(3x + 1)(4x - 3)$

[3 marks]

Answer _____

(b) $(2x - 5)^2(x + 4)$

[3 marks]

Answer _____

5 Expand and simplify $\left(x + \frac{3}{x}\right)\left(2x - \frac{1}{x}\right)$

[3 marks]

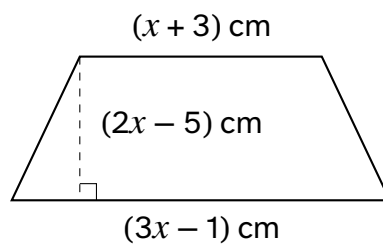
Answer _____

6 Expand and simplify fully $(4x^2 - 1)(x + 2) - (2x + 1)(2x^2 - 3x + 5)$

[4 marks]

Answer _____

- 7 The cross-section of a prism is a trapezium.
The prism has length $(x + 2)$ cm.



Not drawn accurately

The volume of the prism is $V \text{ cm}^3$

Show that $V = 4x^3 - 21x - 10$

[3 marks]

- 8 Expand and simplify $(2x - y)(2x + y)(4x^2 + y^2)$

[3 marks]

Answer _____

- 9 Prove that $(3n + 4)^2 - (3n - 2)(3n + 2)$ is a multiple of 4 for all integer values of n .
[3 marks]