

Factorising Harder Quadratics

For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

Total marks: **24**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 Fill in the boxes to complete each factorisation.

(a) $2x^2 + 7x + 3 = (2x + \boxed{})(x + \boxed{})$

(1)

(b) $3x^2 - 10x - 8 = (3x + \boxed{})(x - \boxed{})$

(1)

(Total for Question 1 is 2 marks)

2 (a) Factorise $5x^2 + 14x - 3$

.....
(2)

(b) Factorise $4x^2 - 4x - 15$

.....
(2)

(Total for Question 2 is 4 marks)

3 Factorise fully $50 - 2x^2$

.....
(2)

(Total for Question 3 is 2 marks)

4 Solve $6x^2 - 7x - 3 = 0$

.....
(3)

(Total for Question 4 is 3 marks)

5 Factorise fully $x^4 - 81$

.....
(2)

(Total for Question 5 is 2 marks)

- 6** $(2x + 1)$ is a factor of $2x^2 + kx - 5$
Find the value of k and factorise the expression.

.....
(3)

(Total for Question 6 is 3 marks)

- 7** Factorise $4k^2 + 11k - 3$

.....
(2)

(Total for Question 7 is 2 marks)

8 (a) Show, by factorising, that $1002^2 - 998^2 = 8000$

(2)

(b) Factorise $(x + 4)^2 - 9$

.....
(1)

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

.....
(3)

(Total for Question 8 is 6 marks)
