Surname	
Other Names	
Candidate's Signature	

GCSE 9 - 1 Questions

Factorise and Expand Quadratics 1

Calculator Not Allowed

INSTRUCTIONS TO CANDIDATES

Write your name in the space provided.

Write your answers in the spaces provided in this question paper.

Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You should have a ruler, compass and protractor where required.

Total Marks :

1) Factorise $x^2 + x - 6$

Answer _____ [2]

2) Expand and simplify $(3x - 2)(2x + 1)$

Answer _____ [2]

3) Factorise fully $4b^2 - 100c^2$

Answer _____ [3]

4) **(a)** Factorise $2x + 6x^2$

Answer _____ [2]

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

Answer _____ [3]

5) **(a)** Factorise

$$x^2 + 4x - 12$$

Answer _____ [2]

(b) (i) Factorise fully

$$2y^2 - 32$$

Answer _____ [2]

(ii) Simplify

$$\frac{2y^2 - 32}{y^2 + 4y - 32}$$

Answer _____ [3]

(c) Factorise fully

$$ab - 4a - 3b + 12$$

Answer _____ [2]

6)**(a)** Factorise $x^2 - 4$

Answer _____ [1]

(b) Hence simplify $\dfrac{x^2 - 4}{2x^2 - x - 6}$

Answer _____ [3]

7) Simplify $\dfrac{2x^2 - 3xy + y^2}{4x - 2y}$

Answer _____ [3]

8) Complete the identity

$(x + 3)^2 \equiv x^2 + \underline{\quad\quad} + 9$

[1]

(a) Show that the following identity is true. [4]

9)

$$(x + 2)(2x - 5) + (1 - x)(3 + 2x) + 1 \equiv -2(x + 3)$$

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(b) Simplify $\dfrac{x^2 + 7x + 12}{x^2 - 9}$. [3]

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(a)   Factorise $(x - 7)^2 + 2(x - 7)$.   [2]

10) ....

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(b)   Factorise $12x^2 - 27y^2$.   [3]

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11) Factorise $6x^2 + 5x - 25$.

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    [2]