Factorising and Expanding Brackets   50 marks

1. (a) Factorise

$$9x^2 - 6x + 1$$

....
(2)

(b) Simplify

$$\frac{6x^2 + 7x - 3}{9x^2 - 6x + 1}$$

....
(3)
(Total 5 marks)

2. (a) Factorise $x^2 - 3x$

....
(2)

(b) Simplify $k^5 \div k^2$

....
(1)

(c) Expand and simplify

(i) $4(x + 5) + 3(x - 7)$

....

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

....
(4)

(d) Factorise $(p + q)^2 + 5(p + q)$

....
(1)
(Total 8 marks)

3. (a) Simplify $k^5 \div k^2$

....
(1)

(b) Expand and simplify

(i) $4(x + 5) + 3(x - 7)$

....

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

....
(4)

(c) Factorise $(p + q)^2 + 5(p + q)$

....
(1)

(d) Simplify $(m^{-4})^{-2}$

....
(1)

(e) Simplify $2t^2 \times 3r^3t^4$

....
(2)
(Total 9 marks)

4. Simplify $$\frac{4x^2 - 9}{2x^2 - 5x + 3}$$

....
(Total 3marks)

5. (a) Simplify $a^3 \times a^4$

.... **(1)**

(b) Simplify $3x^2y \times 5xy^3$

.... **(2)**

(c) Simplify $\dfrac{(x-1)^2}{x-1}$

.... **(1)**

(d) Factorise $x^2 - 9$

.... **(1)**

(Total 5 marks)

6. (a) Simplify $a^3 \times a^4$

.... **(1)**

(b) Simplify $3x^2y \times 5xy^3$

.... **(2)**

(c)   Simplify $\dfrac{(x-1)^2}{x-1}$

………………………
(1)

(d)   Factorise $a^2 - 9b^2$

………………………
(2)
(Total 6 marks)

7.   (a)   Expand and simplify $(x + 7)(x - 4)$

………………………
(2)

(b)   Expand $y(y^3 + 2y)$

………………………
(2)

(c)   Factorise $p^2 + 6p$

………………………
(2)

(d)   Factorise completely $6x^2 - 9xy$

………………………
(2)
(Total 8 marks)

8. (a) Simplify fully

$$\frac{2x^2 - 3x}{4x^2 - 9}$$

……………………………

(Total 3 marks)

9. (a) Factorise completely $\quad 2(x-5)^2 + 3(x-5)$

....

(2)

(b) Simplify $\quad \dfrac{3(y-4)}{(y-4)^2}$

....

(1)

(Total 3 marks)