**Question 1 [12 marks]:**

In factorizing quadratic algebraic expressions, the Cross-Multiplication method finds the factors of an expression from the combinations of factors of the first and last terms. What is the problem-solving strategy used in this process of finding? Factorize the following quadratic expressions:

1. 3𝑥2 + 14𝑥 + 8

3𝑥 factorise = 1 x 3

8 factorise = 4 x 2

Cross multiple

1 4

3 2

2 + 12 = 14

3𝑥2 + 2 𝑥 + 12𝑥 + 8

Final answer ( 𝑥 + 4 )( 3𝑥 + 2)

1. 18𝑥2 − 9𝑥 + 1

18𝑥 factorise = 6 x 3

1 factorise = 1 x 1

Cross multiple

6 1

3 1

6 + 3 = 9

18𝑥2 − 6𝑥 + 3𝑥 + 1

Final answer ( 6𝑥 - 1 )( 3𝑥 - 1)

1. 2𝑥2 − 13𝑥 – 7

2x² - 14x + x – 7

(2x² - 14x) + (x - 7)

2x(x - 7) + 1(x - 7)

Final answer (2x + 1)(x - 7)

1. 132𝑥2 − 73𝑥 – 7

132x² - 84x + 11x – 7

(132x² - 84x) + (11x - 7)

12x(11x - 7) + 1(11x - 7)

Final answer (12x + 1)(11x - 7)