

1) $(x^2 - 3x + 2)(3x - 1)$

2) $(2x^2 + 5x - 3)(x^2 - 2x + 4)$

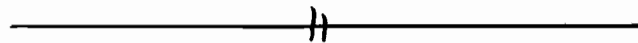
3) $(2x^3 + 7x^2 + 14x + 12) \div (2x + 3)$

4) $(3x^3 - 11x^2 + 18x - 8) \div (3x - 2)$

5) $(6x^3 - 5x^2 + 9x - 4) \div (2x - 1)$

Extension question outside syllabus

6) $(2x^4 - 5x^3 + 13x^2 - 10x + 12) \div (2x^2 - x + 3)$



$$1) (x^2 - 3x + 2)(3x - 1)$$

$$= \begin{array}{r} 3x^3 - 9x^2 + 6x \\ -x^2 + 3x - 2 \end{array}$$

$$= 3x^3 - 10x^2 + 9x - 2$$

$$2) (2x^2 + 5x - 3)(x^2 - 2x + 4)$$

$$= \begin{array}{r} 2x^4 + 5x^3 - 3x^2 \\ -4x^3 - 10x^2 + 6x \\ +8x^2 + 20x - 12 \end{array}$$

$$= 2x^4 + x^3 - 5x^2 + 26x - 12$$

$$3) (2x^3 + 7x^2 + 14x + 12) \div (2x + 3)$$

$$x^2 + 2x + 4$$

$$\begin{array}{r} 2x+3 \overline{) 2x^3 + 7x^2 + 14x + 12} \\ \underline{2x^3 + 3x^2} \\ +4x^2 + 14x \\ \underline{+4x^2 + 6x} \\ +8x + 12 \\ \underline{+8x + 12} \\ 0 \end{array}$$

Answer $x^2 + 2x + 4$

ALGEBRAIC MULTIPLICATION AND DIVISION

EXERCISE

4) (3x^3 - 11x^2 + 18x - 8) ÷ (3x - 2)

Handwritten long division for problem 4 showing the quotient x^2 - 3x + 4 and the remainder 12x - 8.

Answer x^2 - 3x + 4

5) (6x^3 - 5x^2 + 9x - 4) ÷ (2x - 1)

Handwritten long division for problem 5 showing the quotient 3x^2 - x + 4 and the remainder 8x - 4.

Answer 3x^2 - x + 4

$$6) (2x^4 - 5x^3 + 13x^2 - 10x + 12) \div (2x^2 - x + 3)$$

$$\begin{array}{r}
 x^2 - 2x + 4 \\
 2x^2 - x + 3 \overline{) 2x^4 - 5x^3 + 13x^2 - 10x + 12} \\
 \underline{2x^4 - x^3 + 3x^2} \\
 -4x^3 + 10x^2 - 10x \\
 \underline{-4x^3 + 2x^2 - 6x} \\
 + 8x^2 - 4x + 12 \\
 \underline{+ 8x^2 - 4x + 12} \\
 0
 \end{array}$$

Answer $x^2 - 2x + 4$

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