

Cambridge International AS & A Level

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Mathematics

9709/32

Paper 3 Pure Mathematics 3

May/June 2020

Question No (1)

- 1 Find the quotient and remainder when  $6x^4 + x^3 - x^2 + 5x - 6$  is divided by  $2x^2 - x + 1$ .

**Solution:**

$$\begin{array}{r}
 3x^2 + 2x - 1 \\
 \overline{2x^2 - x + 1 \sqrt{6x^4 + x^3 - x^2 + 5x - 6}} \\
 \underline{\pm 6x^4 \mp 3x^3 \pm 3x^2} \\
 4x^3 - 4x^2 + 5x - 6 \\
 \underline{\pm 4x^3 \mp 2x^2 \pm 2x} \\
 -2x^2 + 3x - 6 \\
 \underline{\mp 2x^2 \pm x \mp 1} \\
 2x - 5
 \end{array}$$

*The quotient is  $3x^2 + 2x - 1$  and remainder is  $2x - 5$*