

Quiz 2

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. pg.13#26 (5 marks) Divide by long division to find the quotient and remainder:

$$\frac{x^4 + 2x^3 + 2x^2 - x - 1}{x^2 + 1}$$

$$x^2 + 0x + 1 \overline{) \begin{array}{r} x^4 + 2x^3 + 2x^2 - x - 1 \\ -(x^4 + 0x^3 + x^2) \\ \hline 2x^3 + x^2 - x \\ -(2x^3 + 0x^2 + 2x) \\ \hline x^2 - 3x - 1 \\ -(x^2 + 0x + 1) \\ \hline -3x - 2 \end{array}}$$

$$\frac{x^4 + 2x^3 + 2x^2 - x - 1}{x^2 + 1} = x^2 + 2x + 1 - \frac{3x + 2}{x^2 + 1}$$

Question 2. pg.26#5f (5 marks) Simplify:

$$\frac{2x^2 - x}{4x^2 - 1} \times \frac{4x^2 + 4x + 1}{3x} \div \frac{4x^2 - 2x - 2}{6x^2 - 6x} = \frac{x(2x-1)}{(2x-1)(2x+1)} \cdot \frac{(2x+1)(2x+1)}{3x} \cdot \frac{6x(x-1)}{(2x+1)(2x-2)}$$

$$= \frac{2(x-1)x}{2(x-1)} = x$$