

Quiz 1

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.3#25 (3 marks)

Simplify the following:

$$\begin{aligned} \frac{(2xy^{-3})^{-2}}{(3x^{-2}y^4)^{-3}} &= \frac{(3xy^{-3})^2}{(2xy^{-3})^2} \\ &= \frac{(3x^{-2}y^4)^3}{(2xy^{-3})^2} \\ &= \frac{3^3(x^{-2})^3(y^4)^3}{2^2x^2(y^{-3})^2} \\ &= \frac{27x^{-6}y^{12}}{4x^2y^{-6}} = \frac{27y^{18}}{4x^8} \end{aligned}$$

Question 2. pg.18#4e (3 marks)

Factor the following:

$$4x^2 - 12x + 5$$

$$4x^2(5) = 20x^2 = ab$$

$$\text{s.t. } a + b = -12x$$

$$\Rightarrow a = -10x$$

$$b = -2x$$

$$\begin{aligned} \text{So } 4x^2 - 12x + 5 &= 2x(2x - 1) - 5(2x - 1) \\ &= (2x - 1)(2x - 5) \end{aligned}$$

Question 3. pg.12#18 (4 marks)

Use long division to divide the following:

$$\frac{2x^3 + x - 18}{x - 2}$$

$$\begin{array}{r} x-2 \overline{) 2x^3 + 0x^2 + x - 18} \\ \underline{-(2x^3 - 4x^2)} \\ 4x^2 + x \\ \underline{-(4x^2 - 8x)} \\ 9x - 18 \\ \underline{-(9x - 18)} \\ 0 \end{array}$$

$$2x^3 + x - 18 = (x - 2)(2x^2 + 4x + 9)$$