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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#28 *(4 marks)* Simplify the following:

$$\frac{(a^{-2}b^3)^{-4}}{(a^{-3}b^2)^{-2}(ab)^{-4}} = \frac{a^8 b^{-12}}{a^6 b^{-4} a^{-4} b^{-4}}$$

$$= \frac{a^8 b^4 a^4 b^4}{a^6 b^{12}}$$

$$= \frac{a^{12} b^8}{a^6 b^{12}} = a^6 b^{-4} = \frac{a^6}{b^4}$$

Question 2. pg.8#4i *(2 marks)* Multiply and simplify:

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

$$= x \left[2x^2 + 6x - 5x - 15 \right]$$

$$= x \left[2x^2 + x - 15 \right]$$

$$= 2x^3 + x^2 - 15x$$

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Question 3. ~~pg.8#4j~~ *(4 marks)* Divide by long division:

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

$$\begin{array}{r}
6x^2 + 19x + 78 \\
x-4 \overline{\smash{\big)}\ 6x^3 - 5x^2 + 2x + 1} \\
-\underline{(6x^3 - 24x^2)} \\
19x^2 + 2x \\
-\underline{(19x^2 - 76x)} \\
78x + 1 \\
-\underline{(78x - 312)} \\
313
\end{array}$$

$$\frac{6x^3 - 5x^2 + 2x + 1}{x - 4} = 6x^2 + 19x + 78 + \frac{313}{x - 4}$$