Math 002 P1 **Name:** Solutions

Quiz # 3

September 16, 2014 No electronic devices or interpersonal communication allowed. Show work to get credit.

(1) Identify each of the following expressions as a polynomial or not. For the polynomials, write their degree and the number of terms.

(a) $3x + 8x^3$ polynomial of degree 3 & with 2 terms

(b) $x + \frac{4}{x}$ not a poly.

(c) $9x^5 + \sqrt{x}$ not a poly.

(d) 4 poly. of deg. 0 & with 1 term

(e) $9 - x + 3x^2 - 2x^5$ poly. of deg. 5 & with 4 terms

(2) Simplify $(3x^4 + x^3 + 1) - (x^4 + x^2 - x + 3)$.

$= 2x^4 + x^3 - x^2 + x - 2$

(3) Expand $(x^2 + 4)(x - 3)$.

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

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(4) Compute $(x^3 + 3x^2 - x + 1) \div (x + 1)$.

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

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