

No calculators are allowed on this quiz. Please read each question carefully, follow directions and clearly mark your solutions. Show your work for full credit.

1. Give an example of a polynomial and find its degree.

Polynomial	degree
$x^2 - x + 3$	2
$x^3 + 5x - \frac{1}{2}$	3
$x^5 - 1$	5

2. Give an example of a function that is **not** a polynomial.

$$\sqrt{x}, \frac{1}{x}, x^{3/5}, \dots$$

3. Simplify:

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

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

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

$$\boxed{2x^2 - x - 7}$$

4. Factor:  $x^2 - 5x - 14$

$$\left. \begin{array}{l} A \cdot C = -14 \\ A + C = -5 \end{array} \right\} \begin{array}{l} A = -7 \\ C = 2 \end{array}$$

$$\boxed{(x-7)(x+2)}$$