

Name: _____

Date:

Course: _____

Nyack College

College Algebra

Preliminary Assessment #4

Directions: Provide complete responses to each question. Make sure to show your work.

1. Find the QUOTIENT of the following polynomials using the SYNTHETIC DIVISION method:

a. $(x^5 - 4x^4 + x)$ *divided by* $(x + 3)$

Name: _____

Date:

Course: _____

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b. $(2x^4 - x^3 + 2x - 1)$ *divided by* $(x - \frac{1}{2})$

Name: _____

Date:

Course: _____

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2. Please simplify the following rational expressions:

a. $\frac{3x+9}{x^2-9}$

Name: _____

Date:

Course: _____

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b. $\frac{3x+6}{5x^2} \cdot \frac{x}{x^2-4}$

Name: _____

Date:

Course: _____

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$$C. \frac{\frac{6x}{x^2-4}}{\frac{3x-9}{2x+4}}$$

Name: _____

Date:

Course: _____

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d.
$$\frac{\frac{x^2+7x+12}{x^2-7x+12}}{\frac{x^2+x+12}{x^2-x+12}}$$

Name: _____

Date:

Course: _____

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$$e. \frac{x^2}{2x-3} - \frac{4}{2x-3}$$

Name: _____

Date:

Course: _____

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$$f. \frac{x}{x+1} - \frac{2x-3}{x-1}$$

Name: _____

Date:

Course: _____

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$$\text{eg. } \frac{4x}{x^2-4} - \frac{2}{x^2+x-6}$$

Name: _____

Date:

Course: _____

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h.
$$\frac{1 + \frac{1}{x}}{1 - \frac{1}{x}}$$