**Math 3**

**Unit 4 Review** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| 1. Simplify $\frac{6xy^{3}}{72xy}$

Restrictions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. Simplify

Restrictions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. $\frac{x^{2}+10x+16}{x^{2}+6x+8}÷\frac{1}{x+4}$

Restrictions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. $\frac{n^{2}+10n+24}{(n-3)(n+4)}∙\frac{n-3}{(n+8)(n+6)}$

Restrictions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. $\frac{2}{x+10}-\frac{8}{x-2}$

Restrictions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. $\frac{x}{x+5}+\frac{6}{(x+2)}$

Restrictions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. $\frac{x+2}{2x^{2}+13x+20}-\frac{x+3}{2x^{2}+13x+20}$

Restrictions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. Simplify $\frac{\frac{2x^{2}+7x+3}{x-4}}{\frac{x^{2}+8x+15}{x^{2}-16}}$

Restrictions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Solve $\frac{1}{x}=\frac{x}{x+2}$
 | 1. $\frac{2}{2+x}=\frac{9}{5x+7}$

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| 1. Graph the expression $y=\frac{x^{2}+3x-10}{x^{2}-4}$ and fill in the following:

Vertical asymptotes: \_\_\_\_\_\_\_\_\_\_\_\_\_ Holes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Degree of Numerator: \_\_\_\_ Degree of Denominator: \_\_\_\_ Horizontal asymptotes: \_\_\_\_\_\_Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |