MRS21 – Algebra 2/Trigonometry
Exam 2 Review Sheet

Topics:
- Adding and Subtracting Rational Expressions with Like and Unlike Denominators
- Simplifying Complex Fractions
- Solving Quadratic Equations by Factoring
- Solving Fractional Equations

Be sure to thoroughly prepare for the exam by reviewing (and re-doing) problems in your class notes and homework assignments.

Note that exams are **cumulative**, meaning that some questions on this exam will cover topics that were tested on previous exams and quizzes.

Practice Problems:

1. Expressed as a single fraction, $\frac{3}{x-1}-\frac{2}{x}$ is equivalent to

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

2. The expression $\frac{1-\frac{x}{x-y}}{\frac{1}{x-y}}$ is equivalent to

   (1) $1-x$ (2) $1-y$ (3) y (4) $-y$

3. Which expression is in simplest form?

   (1) $\frac{x}{x^2}$ (2) $\frac{9}{x^2+9}$ (3) $\frac{x^2-4}{x+2}$ (4) $\frac{x^2-6x+9}{x^2-x-6}$

4. For what value(s) of x is $\frac{x-3}{3x^2-7x-20}$ undefined?

5. Solve: $\frac{x}{x-2}-\frac{3}{x}=\frac{2}{x-2}$

6. Find the solution set: $\frac{x}{x-1}=\frac{4}{x}$

7. Solve: $\frac{x}{x-4}-\frac{1}{x+3}=\frac{28}{x^2-x-12}$

8 Express in simplest form: $\frac{\frac{1}{x}+\frac{1}{y}}{\frac{1}{x^2}-\frac{1}{y^2}}$

9. Express in simplest form: $\frac{3x^2}{2x-2}-\frac{15x-18}{2-2x}$

10. Solve: $\frac{x}{x+4}+\frac{8}{x^2-16}=\frac{1}{x-4}$

11. Express in simplest form: $\frac{x}{x^2+3x-4}-\frac{x+1}{2x^2-2}$

12. Express in simplest form: $\frac{\frac{1}{3y}-1}{\frac{1}{6y^2}-\frac{3}{2}}$

13. Express in simplest form: $\frac{2}{x^2-4}-\frac{1}{x^2+2x}$