

Review for Exam 1

Section 1.1

Given information about x and y-find resulting sign

Write statements as inequalities

absolute values

Section 1.2

Exponents:

$$x^m x^n = x^{m+n} \quad x^{-m} = \frac{1}{x^m}$$

$$(x^m)^n = x^{mn} \quad \frac{x^m}{x^n} = x^{m-n}$$

$$x^0 = 1 \quad (xy)^m = x^m y^m$$

$$\left(\frac{x}{y}\right)^m = \frac{x^m}{y^m}$$

Radicals:

$$\sqrt[b]{x^a} = x^{\frac{a}{b}}$$

Section 1.3

Polynomials:

adding, subtracting, multiplying, dividing

factoring -- look for common factors first

three terms--trial and error

two terms--formula or common factor

Section 1.4

Rational expressions (fractions with polynomials):

adding, subtracting, multiplying, dividing

Complex fractions (fraction over a fraction)

Rationalizing denominators:

$$\frac{3}{\sqrt{x}} = \frac{3}{\sqrt{x}} \cdot \frac{\sqrt{x}}{\sqrt{x}} = \frac{3\sqrt{x}}{x} \text{ or}$$

$$\frac{3}{\sqrt{x}+1} = \frac{3}{\sqrt{x}+1} \cdot \frac{\sqrt{x}-1}{\sqrt{x}-1} = \frac{3\sqrt{x}-3}{x-1}$$

Rationalizing numerators

Section 2.1

Solving equations:

linear

**rational equations (fractions with variable in denominator)--
either an answer you can use, an answer you can't use (no
solution) or all real x except x =??**

Solving formula for a variable

For what value of c is x=? a solution of the equation

Section 2.2

story problems--look over homework

Section 2.3

Solving quadratic equations-- $ax^2 + bx + c = 0$

(1) solve by factoring

(2) solve by completing the square (do not have to)