Excluded Values of Rational Expressions

Name _____

Date _____ Period _____

Rational Expression

a fraction of polynomials

$$\frac{3}{2x} \qquad \frac{4x+1}{x^2-9} \qquad \frac{2x^2+3x-2}{x^2-4x-12}$$

Anything you do with fraction you can do with rational expression, but with rational expressions there are more rules to consider.

Excluded Values

Excluded values occur where the denominator is equal to zero.

To find the excluded values, set denominator equal to zero and solve.

$$\frac{3}{2x} \qquad \frac{4x+1}{x^2-9} \qquad \frac{2x^2+3x-2}{x^2-4x-12}$$

$$2x = 0 \qquad x^2 - 9 = 0 \qquad x^2 - 4x - 12 = 0$$

Find the excluded values for the following rational expressions

$$\frac{15x^2}{3x^2 - 18x} \qquad \frac{x + 5}{x^2 - 25}$$

Find the excluded values for the following rational expressions

$$\frac{x^2 - 9}{x^2 - 3x - 18} \qquad \frac{x^2 + 4x + 4}{x^2 + 5x + 6}$$

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To find the excluded values, set denominator equal to zero and solve.