

Algebra Lesson 11-1 Rational Expressions

Simplifying Rational Expressions

Due Today: 11-1A p.532 #1-3 all

Due Tomorrow: 11-1B p.532 #1-17 odd; #25

$$6x + 9$$

$$6x + 9 = \frac{3(2x+3)}{1}$$

$$2x^2 + 7x + 6$$

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$$\begin{array}{r} 12 \\ 3 \diagdown 4 \\ 7 \end{array} \quad \begin{array}{r} x \quad 2 \\ 2x \quad 2x \\ \hline 3 \quad 3x \quad 6 \end{array}$$

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

$$\frac{3}{x+2}$$

Rational Expressions

$$\frac{x^2 + 5x + 6}{2x^2 + 6x}$$

$$\frac{x^2 + 5x + 6}{2x^2 + 6x} \frac{(x+2)(\cancel{x+3})}{2x(\cancel{x+3})}$$

$$\frac{x+2}{2x}$$

$$\frac{x^2 + 7x}{x^2 - 49} = \frac{x(x+7)}{\cancel{(x+7)}(x-7)}$$

$$\frac{x}{x-7}$$

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

Simplifying Rational Expressions

$$\frac{18 - 6x}{x^2 - 9}$$

$$x^2 + 0x - 9$$

$$\begin{array}{r} \cancel{7} \\ \cancel{3} \quad \cancel{-3} \\ \cancel{0} \end{array}$$

$$\frac{\cancel{6(3-x)} \cdot -1}{(x+3)\cancel{(x-3)}}$$

$$= \boxed{\frac{-6}{x+3}}$$