Mathematics 11U

2.6 – Multiplying and Dividing Rational Expressions

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$$\frac{2x+2}{x^2+2x+1} \times \frac{x^2-9x+14}{2x-4}$$

1. Factor Fully
2. Simplify
3. State Restrictions.

$$= \frac{2(x+1)}{(x+1)(x+1)} \times \frac{(x-7)(x-2)}{2(x-2)}$$

$$= \frac{(x-7)}{(x+1)}$$

$\{x \neq -1, 2\}$

$$= \frac{x-7}{x+1}$$

$$\frac{5x+1}{5x^2-42x+49} \times \frac{5x^2-37x+42}{35x+7}$$

210

@ 245

1, 210
2, 105
3, 70
5, 42
6, 35
7, 30
14, 15

$$= \frac{5x+1}{5x^2-35x-2x+49} \times \frac{5x^2-30x-7x+42}{7(5x+1)}$$

$$= \frac{5x+1}{(5x-7)(x-7)} \times \frac{(5x-7)(x-6)}{7(5x+1)}$$

$7/5$ $\quad$ 7 $\quad$ $-1/5$

$$= \frac{(x-6)}{7(x-7)}$$

$$\left\{x \neq -\frac{1}{5}, \frac{7}{5}, 7\right\}$$

$$\frac{5x+4}{5} \div \frac{10x^2+8x}{2x^2+2x}$$

$$\frac{1}{2} \div \frac{3}{2} = \frac{1}{2} \times \frac{2}{3} = \frac{1}{3}$$

$$= \frac{5x+4}{5} \times \frac{2x(x+1)}{2x(5x+4)}$$

-1, 0, $-\frac{4}{5}$

$$= \frac{x+1}{5} \qquad \{x \neq -1, -\tfrac{4}{5}, 0\}$$

$$\frac{x^2 - 14x + 40}{x^2 - 17x + 70} \div \frac{3x^2 - 12x}{5x^2 - 35x}$$

$$= \frac{(x-4)(x-10)}{(x-7)(x-10)} \times \frac{5x(x-7)}{3x(x-4)}$$

$7 \quad 10 \qquad 0 \quad 7 \qquad 0 \quad 4$

$$= \frac{5}{3} \qquad \{x \neq 0, 4, 7, 10\}$$