

Quiz

Sec. 9.6, 9.7, 11.3, 11.4*

Sec. 11.4 Operations With Rational Expressions

Multiply. State any restrictions on the domain.

$$\begin{aligned}
 \text{a. } \frac{2m+2}{5m+10} \cdot \frac{m+2}{2m-2} &= \frac{(2m+2)(m+2)}{(5m+10)(2m-2)} \\
 &= \frac{\cancel{2}(m+1)\cancel{(m+2)}}{5\cancel{(m+2)}\cancel{2}(m-1)} = \frac{m+1}{5(m-1)}, m \neq -2, 1
 \end{aligned}$$

$$\begin{array}{r}
 m+2=0 \\
 \underline{-2 \quad -2} \\
 m=-2
 \end{array}
 \qquad
 \begin{array}{r}
 m-1=0 \\
 \underline{+1 \quad +1} \\
 m=1
 \end{array}$$

$$\begin{aligned}
 \text{b. } \frac{t-6}{t+6} \cdot \frac{4t}{9} \cdot \frac{t+6}{10t^2} \\
 \frac{(t-6)\cancel{(4t)}\cancel{(t+6)}}{\cancel{(t+6)}(9)\cancel{(10t \cdot t)}} &= \frac{2(t-6)}{45t}, \\
 &\text{where } t \neq -6, 0
 \end{aligned}$$

$$\begin{array}{r}
 t+6=0 \\
 \underline{-6 \quad -6} \\
 t=-6
 \end{array}
 \qquad
 \begin{array}{r}
 10t^2=0 \\
 \underline{10 \quad 10} \\
 t^2=0 \\
 t=0
 \end{array}$$

Divide

Divide : multiply by
the reciprocal

$$a. \quad \frac{c+5}{c-8} \div \frac{c-5}{c-8}$$

$$\frac{(c+5)}{\cancel{(c-8)}} \cdot \frac{\cancel{(c-8)}}{(c-5)} = \frac{c+5}{c-5}, \text{ where } c \neq 5, 8$$

$$* \quad \begin{array}{r} c-8=0 \\ +8 \quad +8 \\ \hline c=8 \end{array} \quad \begin{array}{r} c-5=0 \\ +5 \quad +5 \\ \hline c=5 \end{array}$$

$$b. \quad \frac{6}{\frac{c^2-3c}{c}} \cdot \frac{2c^2-2c-12}{6c+12} = 2(c^2-c-6)$$

$$\frac{\cancel{2} \cdot \cancel{3} \cdot \cancel{(c+2)} \cdot \cancel{(c-3)}}{c \cdot \cancel{(c-3)} \cdot \cancel{6} \cdot \cancel{(c+2)}} = \frac{1}{c}, \text{ where } c \neq -2, 3$$

$$\begin{array}{r} c-3=0 \\ +3 \quad +3 \\ \hline c=3 \end{array} \quad \begin{array}{r} c+2=0 \\ -2 \quad -2 \\ \hline c=-2 \end{array}$$

$$c. \quad \frac{8b-40}{8} \div \frac{b^2-25}{b+5}$$

$$\frac{(8b-40)}{8} \cdot \frac{(b+5)}{(b^2-25)} \begin{matrix} 1:25 \\ 5:5 \end{matrix}$$

$$\frac{\cancel{8} \cdot \cancel{(b-5)} \cdot \cancel{(b+5)}}{\cancel{8} \cdot \cancel{(b+5)} \cdot \cancel{(b-5)}} = 1, \text{ where } \begin{matrix} b \neq 5 \\ -5 \end{matrix}$$

P. 550 (6-11) all