

11-4

Multiplying and
Dividing Rational
Expressions

Simplify

$$\frac{\cancel{r^2}x}{\cancel{9t^3}} \cdot \frac{\cancel{3}t^4}{\cancel{1}}$$

$$= \frac{3r^2xt^4}{9rt^3}$$

$\div 3$

$$\frac{1rxt}{3}$$

$$\frac{a+4}{a^2} \cdot \frac{a}{a^2+2a-8}$$

$$= \frac{\cancel{a+4}}{\cancel{a^2}} \cdot \frac{\cancel{a}}{(\cancel{a+4})(a-2)}$$

$$\begin{array}{c} -4 \quad 2 \\ \hline 4 - 2 \end{array}$$

$$\frac{a}{a^2} = \frac{a}{a \cdot a}$$

$$= \frac{1}{a(a-2)}$$

Simplify

$$\frac{3x}{16x^2} \cdot \frac{8x^2}{3}$$

$$= \frac{24x^3}{48x^2}$$

$\div 24$

$$= \frac{1x}{2}$$

$$\left(\frac{x+3}{x} \right) \cdot$$

$$\frac{5}{x^2+7x+12}$$

4 3

$$= \frac{\cancel{x+3}}{x} \cdot$$

$$\frac{5}{(x+4)\cancel{(x+3)}}$$

$$\frac{5}{x(x+4)}$$

Simplify

÷20

$$\frac{4}{15n^3} \div \frac{12}{25n} = \frac{4}{15n^3} \cdot \frac{25n}{12} = \frac{100n}{180n^3}$$

n^{-2}

$$\frac{5}{9n^2}$$

$$\frac{a+4}{a^2} \div \frac{a}{(a+4)(a-2)} = \frac{(a+4)}{a^2} \cdot \frac{(a+4)(a-2)}{a}$$

$$\frac{(a+4)(a+4)(a-2)}{a^3}$$