

# Objective #8

Simplify expressions with rational exponents (Page 2 of 2)

3.  $x^{-1/2} \cdot x^{-5/7}$

Product Rule

$$x^{-1/2 + -5/7}$$

$$\begin{aligned} & -\frac{1}{2} + -\frac{5}{7} \\ & -\frac{7}{14} + -\frac{10}{14} = -\frac{17}{14} \end{aligned}$$

$$\Downarrow$$
$$x^{-17/14} = \frac{1}{x^{17/14}}$$

4.  $\left(\frac{f^{16}}{g^{12}}\right)^{3/4}$  power rule  $\Rightarrow \frac{f^{16 \cdot \frac{3}{4}}}{g^{12 \cdot \frac{3}{4}}} = \frac{f^{12}}{g^9}$

$\downarrow$   
not the same base, so quotient rule does not apply.