

## Sec. 11.2 Simplifying Rational Expressions

Ex:  $\frac{4m - 20}{8m}$

Simplify and state the restrictions on the domain.

- ① Set denominator  $\neq 0$ .    ② Factor & cancel

$$\frac{8m}{8} \neq \frac{0}{8}$$

$$\boxed{D: m \neq 0}$$

$$\frac{4m - 20}{8m} = \frac{\cancel{4}(m - 5)}{\cancel{4} \cdot 2m}$$

$$= \boxed{\frac{m - 5}{2m}}$$

b.  $\frac{7x - 28}{x^2 + 3x - 28} = \frac{7(\cancel{x - 4})}{(\cancel{x - 4})(x + 7)} = \frac{7}{x + 7}$

$\begin{array}{r} 1 \cdot 28 \\ 2 \cdot 14 \\ -4 \cdot 7 \end{array}$

$$\begin{array}{r} x - 4 \neq 0 \quad x + 7 \neq 0 \\ +4 \quad +4 \quad \quad -7 \quad -7 \\ \hline x \neq 4, \quad x \neq -7 \end{array}$$

$$\frac{7}{x + 7}, \quad x \neq 4 \text{ and } x \neq -7$$