

4.2 Hwk Solution

$$(7) \frac{x^2 + 3x - 18}{x^2 - 36} = \frac{\cancel{(x+6)}(x-3)}{\cancel{(x+6)}(x-6)} = \boxed{\frac{x-3}{x-6}}$$

$$\boxed{x \neq 6, -6}$$

$$(13) \frac{\frac{5(y-4)}{\cancel{5y-20}} \cdot \frac{7(y+5)}{\cancel{7y+35}}}{\frac{\cancel{3y+15}}{3(y+5)} \cdot \frac{\cancel{10y+40}}{10(y+4)}} = \frac{\cancel{5} \cdot 7(y-4)(\cancel{y+5})}{3 \cdot \cancel{10}(\cancel{y+5})(y+4)} =$$

$$\boxed{y \neq -3, -4}$$

$$\boxed{\frac{7(y-4)}{6(y+4)}}$$

$$(16) \frac{\frac{y(y-2)}{\cancel{y^2-2y}} \cdot \frac{(y+9)(y-9)}{\cancel{y^2-81}}}{\frac{\cancel{y^2+7y-18}}{(y+9)(y-2)} \cdot \frac{\cancel{y^2-11y+18}}{(y-9)(y-2)}} = \frac{y(\cancel{y-2})(\cancel{y+9})(\cancel{y-9})}{(\cancel{y+9})(\cancel{y-2})(\cancel{y-9})(y-2)}$$

$$\boxed{y \neq -9, 2, 9}$$

$$\boxed{\frac{y}{y-2}}$$

$$(19) \quad \frac{5y}{2x^2} \div \frac{5y^2}{8x^2} \Rightarrow \frac{5y}{2x^2} \cdot \frac{8x^2}{5y^2} = \frac{(\cancel{5})^4 (\cancel{8x^2})}{(\cancel{2x^2}) (\cancel{5y^2})} = \frac{4}{y}$$

$$\boxed{\begin{matrix} x \neq 0 \\ y \neq 0 \end{matrix}}$$

$$(24) \quad \frac{x^2 - 4}{x^2 + 6x + 9} \div \frac{x^2 + 4x + 4}{x^2 - 9}$$

$$\begin{matrix} (x+2)(x-2) & (x+3)(x-3) \\ \underline{x^2 - 4} & \underline{x^2 - 9} \\ x^2 + 6x + 9 & x^2 + 4x + 4 \\ (x+3)(x+3) & (x+2)(x+2) \end{matrix} = \frac{(\cancel{x+2})(x-2)(\cancel{x+3})(x-3)}{(\cancel{x+3})(x+3)(\cancel{x+2})(x+2)}$$

$$\boxed{x \neq -3, -2}$$

$$\boxed{\frac{(x-2)(x-3)}{(x+3)(x+2)}}$$