

### 3.1 Notes

inverse operations  
"undo" each other

addition  $\longleftrightarrow$  subtraction

(make a zero)

$$\begin{array}{r} x+4=10 \\ -4 \quad -4 \\ \hline \end{array}$$

$$x+0=6$$

$$\boxed{x=6}$$

$$\begin{array}{r} x-3=8 \\ +3 \quad +3 \\ \hline \end{array}$$

$$x+0=11$$

$$\boxed{x=11}$$

multiplication  $\longleftrightarrow$  division

(simplify or reduce  
to make a 1)

$$3x = 15$$

$$\frac{x}{8} = 10$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$8 \cdot \frac{x}{8} = 10 \cdot 8$$

$$1x = 5$$

$$\frac{8x}{8} = 80$$

$$\boxed{x = 5}$$

$$1x = 80$$

$$\boxed{x = 80}$$