BIG IDEAS:

- One-step equations can be solved using **inverse (opposite) operations**
- If we do something to one side of an equation, we **must do the same thing** to the other side of the equation
- Before isolating the variable, **collect like terms** on both sides of the equation

EXAMPLE 1

$$x+5=18$$
$$x+5-5=18-5$$
$$x=18-5$$
$$x=13$$

EXAMPLE 2

$$k-6=9$$
$$k-6+6=9+6$$
$$k=9+6$$
$$k=15$$

EXAMPLE 3

$$-3x=21$$
$$\frac{-3x}{-3}=\frac{21}{-3}$$
$$x=-7$$

EXAMPLE 4

$$3x-(-2x)=-45+15$$
$$3x+2x=-45+15$$
$$\frac{5x}{5}=\frac{-30}{5}$$
$$x=-6$$

MORE EXAMPLES

Things to remember...

THINKING BEYOND...

1. Victoria claims that there are two solutions to the equation $x^2=9$, but only one solution to the equation $x^3=8$. Is Victoria's claim correct? Explain.

2. Omran claims that the equations $x^2=16$ and $2^x=16$ have the same solutions. Explain why Omran's claim is not entirely correct.

3. Does the equation $x^2=-9$ have any real number solutions? Explain.