SOLVING EQUATIONS: One and Two Steps

In an **EQUATION** …there is an __EQUAL__ sign

To **SOLVE** an Equation …isolate the variable

We can follow the steps below to solve equations

C	Clear fractions by multiplying all terms by a common denominator.
E	Expand using the distributive law to eliminate brackets
I	Isolate the variable on one side of the equation using opposite operations
D	Divide by the numerical coefficient attached to the variable

EXAMPLES Solve and check the following equations

1. a) $x+4=10$

$x = 10-4$
$x = 6$

LS | RS
$= x+4$ | $=10$
$= 6+4$
$= 10$ ✓

b) $x-4=10$

$x = 10+4$
$x = 14$

LS | RS
$x-4$ | $=10$
$=14-4$
$=10$ ✓

2. a) $\frac{2k}{2} = \frac{4}{2}$

$k = 2$

LS | RS
$2k$ | $=4$
$=2(2)$
$=4$ ✓

b) $\frac{40}{5} = \frac{5k}{5}$

$8 = k$

LS | RS
$=40$ | $5k$
$=5(8)$
$=40$ ✓

3. a) $2x-5=15$

$2x = 15+5$
$\frac{2x}{2} = \frac{20}{2}$
$x = 10$

LS | RS
$2x-5$ | $=15$
$=2(10)-5$
$=20-5$
$=15$ ✓

b) $-x+5=15$

$-x = 15-5$
$\frac{-x}{-1} = \frac{10}{-1}$
$x = -10$

LS | RS
$-x+5$ | $=15$
$=-(-10)+5$
$=10+5$
$=15$ ✓

3. a) $\frac{2k}{5} = 4$

$2k = 4 \times 5$

$\frac{2k}{2} = \frac{20}{2}$

$\boxed{K = 10}$

b) $6 = \frac{3k}{2}$

$6 \times 2 = 3k$

$\frac{12}{3} = \frac{3k}{3}$

$\boxed{4 = K}$

LS	RS
$= 6$	$= \frac{3(4)}{2}$
✓	$= \frac{12}{2}$
	$= 6$

4. a) $\frac{k}{4} - 3 = 4$

$K - 12 = 16$

$K = 16 + 12$

$\boxed{K = 28}$

b) $\frac{k}{7} - 2 = 31$

$K - 14 = 217$

$K = 217 + 14$

$\boxed{K = 231}$

LS	RS
$= \frac{231}{7} - 2$	$= 31$
$= 33 - 2$	✓
$= 31$	

5. a) $0.25k + 2 = 6$

$0.25K = 6 - 2$

$\frac{0.25K}{0.25} = \frac{4}{0.25}$

$\boxed{K = 16}$

b) $1.2 = 0.5t - 4.8$

$1.2 + 4.8 = 0.5t$

$\frac{6}{0.5} = \frac{0.5t}{0.5}$

$\boxed{12 = t}$

LS	RS
$= 1.2$	$0.5(12) - 4.8$
	$= 6 - 4.8$
	$= 1.2$
	✓