# One–Step Equations Using the Addition Rule
## with Emphasis on Decimals and Fractions

**Goal:** **To isolate the variable by itself.**
**Method:** **If there is a number added to the variable then subtract this number from both sides.**

**Examples:**

$x + \frac{1}{2} = 3\frac{3}{4}$

$x + \frac{1}{2} - \frac{1}{2} = 3\frac{3}{4} - \frac{1}{2}$

$x = 3\frac{3}{4} - \frac{2}{4}$

$x = 3\frac{1}{4}$

Subtracting the $\frac{1}{2}$ from both sides eliminates the $+\frac{1}{2}$ that is with the variable

$y - 0.75 = 19.5$

$y - 0.75 = 19.5 + 0.75$

$y = 20.25$

Adding the 0.75 from both sides eliminates the –0.75 that is with the variable.

**Exercises:**

1) $z - 0.5 = 6$

2) $y + \frac{3}{8} = 1\frac{1}{16}$

3) $a - 4\frac{2}{9} = -5$

4) $r - 0.2 = 0.3$

5) $m + 0.625 = 3.375$

6) $p + 1\frac{1}{3} = \frac{1}{3}$

7) $b + 17\frac{3}{7} = 15\frac{3}{14}$

8) $c - 2\frac{3}{5} = -5\frac{1}{10}$

9) $z + 11.79 = 10.89$

10) $s - 4.75 = -4.75$

1) z = 6.5
2) $y = \frac{11}{16}$
3) $a = -\frac{7}{9}$
4) r = 0.5
5) m = 2.75
6) p = –1
7) $b = -2\frac{3}{14}$
8) $c = -2\frac{1}{2}$
9) z = –0.9
10) s = 0

11) $w - 7\frac{1}{4} = 2\frac{1}{2}$

12) $r + 7.312 = 3.01$

13) $t + 0.9 = 3.2$

14) $x - 8 = -2\frac{1}{2}$

15) $y - 16\frac{1}{3} = -18\frac{2}{3}$

16) $z + 14.729 = 8.41$

17) $r + 13\frac{2}{9} = 12\frac{1}{9}$

18) $y - 4.027 = -2.7$

19) $a - 17.017 = 3.1502$

20) $b + 9\frac{12}{17} = 3\frac{4}{17}$

21) $d + 8\frac{1}{3} = 9\frac{2}{3}$

22) $m - 2.3179 = -2.01$

11) $w = 9\frac{3}{4}$ 13) $t = 2.3$ 15) $y = -2\frac{1}{3}$ 17) $r = -1\frac{1}{9}$ 19) $a = 20.1672$ 21) $d = 1\frac{1}{3}$

12) $r = -4.302$ 14) $x = 5\frac{1}{2}$ 16) $t = -6.319$ 18) $y = 1.327$ 20) $b = -6\frac{8}{17}$ 22) $m = 0.3079$