

# Solving Absolute Value Equations



Level 1 - Solve simple absolute value equations

Level 2 - Solve multi-step absolute value equations

Level 3 - Create and solve absolute value equations

## Answers:

### Level 1

<b>a)</b> $x = +3, -3$	<b>b)</b> $r = +1, -1$	<b>c)</b> no solution
<b>d)</b> $m = +5, -5$	<b>e)</b> $y = +4, -4$	<b>f)</b> no solution
<b>g)</b> $c = +6, -6$	<b>h)</b> $p = +12, -12$	<b>i)</b> $f = +10, -10$
<b>j)</b> $q = +20, -20$	<b>k)</b> $v = +24, -24$	<b>l)</b> $w = +14, -14$
<b>m)</b> $x = +8, -2$	<b>n)</b> $n = +1, -5$	<b>o)</b> no solution
<b>p)</b> $t = +4, -10$	<b>q)</b> $q = +10, -6$	<b>r)</b> $k = +4, -14$

### Level 2

<b>a)</b> $n = +1, +5$	<b>b)</b> $x = 0, -1$	<b>c)</b> $c = +12, -12$
<b>d)</b> $m = +1, +7$	<b>e)</b> $y = -1, -5$	<b>f)</b> $n = +11, -10$
<b>g)</b> $k = +5, -5$	<b>h)</b> $n = +10, -10$	<b>i)</b> $h = +12, -24$
<b>j)</b> $m = +13, -3$	<b>k)</b> $p = +9, -9$	<b>l)</b> $r = +6, -6$

### Level 3

<b>a)</b> $ x - 75  = 3 \Rightarrow x = 72, 78 \Rightarrow \text{Min} = 72, \text{Max} = 78$
<b>b)</b> $ s - 72  = 4 \Rightarrow s = 68, 76 \Rightarrow \text{TotalMin} = 272, \text{TotalMax} = 304$
<b>c)</b> $ T - 98.6  = 2.4 \Rightarrow T = 96.2, 101 \Rightarrow \text{Min} = 96.2^\circ, \text{Max} = 101^\circ$
<b>d)</b> $ 2v - 3(12)  = 6 \Rightarrow v = \$15, \$21$
<b>e)</b> $ 3L - 60  = 9 \Rightarrow L = 17 \text{ cm}, 21 \text{ cm} \Rightarrow \text{Min} = 17 \text{ cm}, \text{Max} = 21 \text{ cm}$