2.5 Solving Addition Equations

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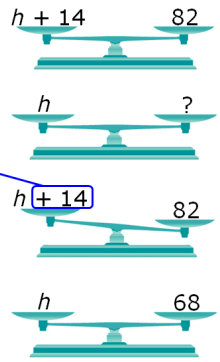

The equation h + 14 = 82 can be represented as a balanced scale.

To find the value of h, you need h by itself on one side of the scale.

To get h by itself, first take away 14 from the left side of the scale. Now the scale is unbalanced.

To rebalance the scale, take away 14 from the other side.

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Taking away 14 from both sides of the scale is the same as subtracting 14 from both sides of the equation.

$h + 14 = 82$

$-14 \quad -14$

$h = 68$

$68 + 14 \stackrel{?}{=} 82$

$82 = 82$ ✓

68
14
82

Subtraction is the inverse, or opposite, of addition. If an equation contains addition, solve it by subtracting from both sides to "undo" the addition.

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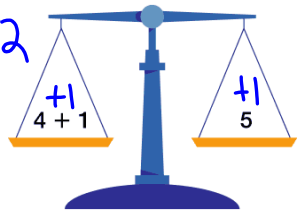
Think of equations like a balance scale.

Both sides must have the same quantity to be balanced.

If you add something to one side, you have to add the same thing to the other side.

$h + 14 = 82$



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Solve the equation. Check your answer.

$x + 87 = 152$

$x + 87 = 152$

$-87 \quad -87$

$x = 65$

87 is added to x.

Subtract 87 from both sides to undo the addition.

Check $x + 87 = 152$

$65 + 87 \stackrel{?}{=} 152$

$152 \stackrel{?}{=} 152$ ✓

Substitute 65 for x in the equation.

65 is the solution.

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Solve the equation. Check your answer.

$72 = 18 + y$

$18 + y = 72$

$-18 \quad -18$

$y = 54$

$72 = 18 + 54$

$72 = 72$ ✓

1
18
54
72

1
2
3
4
5

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Solve the equation. Check your answer.

$u + 43 = 78$

$-43 \quad -43$

$u = 35$

$35 + 43 \stackrel{?}{=} 78$

$78 = 78$ ✓

35
43
78

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Solve the equation. Check your answer.

$68 = 24 + g$

$24 + g = 68$

$-24 \quad -24$

$g = 44$

$68 \stackrel{?}{=} 24 + 44$

$68 = 68$ ✓

24
+44
68

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Solve the equation. Check your answer.

1. $x + 15 = 72$

$-15 \quad -15$

$x = 57$

$57 + 15 \stackrel{?}{=} 72$

$72 = 72$ ✓

57
15
72

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Solve the equation. Check your answer.

2. $81 = x + 24$

$-24 \quad -24$

$57 = x$

$x = 57$

$x + 24 = 81$

$81 \stackrel{?}{=} 57 + 24$

$81 = 81$ ✓

57
24
81

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Solve the equation. Check your answer.

3. $x + 22 = 67$

$-22 \quad -22$

$x = 45$

$45 + 22 \stackrel{?}{=} 67$

$67 = 67$ ✓

45
22
67

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Solve the equation. Check your answer.

4. $93 = x + 14$

$x + 14 = 93$

$-14 \quad -14$

$x = 79$

$93 \stackrel{?}{=} 79 + 14$

$93 = 93$ ✓

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