

Solving Addition and Subtraction Equations

CCSS: 6.EE.B.7: Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.

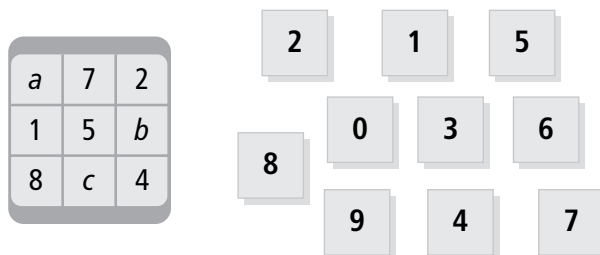


Launch



Each row, column, and diagonal in the number square has the same sum.

MP1, MP7



Find the values of a , b , and c .

$a =$

$b =$

$c =$

Explain.

Reflect Did you use addition or subtraction to find each missing value? Could you use either operation?

Got It?

PART 1 Got It



Solve the equation $8 + x = 36$.

PART 2 Got It



Each equation shows an operation. For which equation(s) is addition the inverse operation?

I. $b + 27 = 78$

II. $25 = g - 19$

III. $18 + v = 19$

PART 3 Got It



Write a simpler, equivalent equation to solve $d - 29 = 85$.

Close and Check



Focus Question

© MP2, MP7

How do you use addition and subtraction to undo each other? Why might this be helpful in balancing equations?



Do you know HOW?

1. Solve the equation.

$$7 + w = 23$$

$$w =$$

2. Write the inverse operation for each equation shown in the table below. Use **S** for subtraction and **A** for addition.

Equation	Inverse Operation
$12 + r = 47$	<input type="text"/>
$d - 15 = 4$	<input type="text"/>
$14 - s = 10$	<input type="text"/>
$t + 7 = 23$	<input type="text"/>
$56 + w = 92$	<input type="text"/>
$y - 8 = 61$	<input type="text"/>

3. Circle the equation that has a solution of 16.

$$x + 6 = 22$$

$$x - 6 = 22$$



Do you UNDERSTAND?

4. **Vocabulary** What are inverse operations? Give an example.

5. **Error Analysis** Identify the error in solving the equation and give the correct answer.

$$\begin{aligned} 5 + 7 + z &= 33 \\ 12 + z &= 33 \\ 12 + 12 + z &= 33 + 12 \\ z &= 45 \end{aligned}$$
