Lesson 9: Writing Addition and Subtraction Expressions

Classwork

**Example 1**

Create a bar diagram to show $3$ plus $5$.

How would this look if you were asked to show $5$ plus $3$?

Are these two expressions equivalent?

**Example 2**

How can we show a number increased by $2$?

Can you prove this using a model? If so, draw the model.

**Example 3**

Write an expression to show the sum of $m$ and $k$.

Which property can be used in Examples 1–3 to show that both expressions given are equivalent?

**Example 4**

How can we show $10$ minus $6$?

* Draw a bar diagram to model this expression.
* What expression would represent this model?
* Could we also use $6-10$?

**Example 5**

How can we write an expression to show $3$ less than a number?

* Start by drawing a diagram to model the subtraction. Are we taking away from the $3$ or the unknown number?
* What expression would represent this model?

**Example 6**

How would we write an expression to show the number $c$ being subtracted from the sum of $a$ and $b$?

* Start by writing an expression for “the sum of $a$ and $b$.”
* Now, show $c$ being subtracted from the sum.

**Example 7**

Write an expression to show the number $c$ minus the sum of $a$ and $b$.

Why are the parentheses necessary in this example and not the others?

Replace the variables with numbers to see if $c-(a+b)$ is the same as $c-a+b$.

Drag the expression cards to their matching sentence, then record the information on the organizer below.

|  |  |  |
| --- | --- | --- |
| **Verbal** | **Expression 1** | **Expression 2 –****if possible!** |
| the sum of $7$ and $1.5$ |  |  |
| $w$ increased by $4$ |  |  |
| the sum of $a$, $b$, and $c$ |  |  |
| $3$ less than $p$ |  |  |
| $4$ decreased by the sum of $g$ and $5$ |  |  |
| the sum of $g$ and $h$ reduced by $11$ |  |  |
| $11$ more than the sum of $g$ and $h$ |  |  |
| w decreased by $4$ |  |  |
| $4$ less than the sum of $g$ and $5$ |  |  |
| the difference of $3$ and $p$ |  |  |

What do you notice about the sentences that don’t have two expressions? Why do you think that is?

Problem Set

1. Write two expressions to show a number increased by $11$. Then, draw models to prove that both expressions represent the same thing.
2. Write an expression to show the sum of $x$ and $y$.
3. Write an expression to show $k$ less than $3.5$.
4. Write an expression to show the sum of $y $and $7$ reduced by $15$.
5. Write an expression to show $5$ less than $y$, plus $g$.
6. Write the following expressions in words.
	1. $x+12$
	2. $10-x+2$
	3. $\left(3+r\right)+ 9$