7.EE Writing Expressions

[Alignment 1: 7.EE.A.1](#)

Write an expression for the sequence of operations.

a. Add 3 to x, subtract the result from 1, then double what you have.

b. Add 3 to x, double what you have, then subtract 1 from the result.

Commentary:
The instructions for the two expressions sound very similar, however, the order in which the different operations are performed and the exact wording make a big difference in the final expression. Students have to pay close attention to the wording: "subtract the result from 1" and "subtract 1 from the result" are very different.

Solution: Solution

a. This problem can be done step-by-step. We first add 3 to x:

$$x + 3.$$

Then we subtract the result that we just got from 1:

$$1 - (x + 3).$$

We then double, meaning we multiply this entire expression by 2:

$$2(1 - (x + 3)).$$

If we choose to simplify this expression, we use the distributive, commutative and associative properties in the following way:

$$
\begin{aligned}
2(1 - (x + 3)) &= 2(1 - x - 3) && \text{distribute the -} \\
&= 2(-x - 2) && \text{combining like terms} \\
&= -2x - 4 && \text{distribute the 2}
\end{aligned}
$$

b. Again, we add 3 to x:

$$x + 3$$

This time, next we double, meaning multiplying this expression by 2:

$$2(x + 3).$$

Then we subtract 1 from the result and we have:

$$2(x + 3) - 1.$$

If we choose to simplify this expression, we use the distributive and associative properties in the following way:

$$
\begin{aligned}
2(x + 3) - 1 &= (2x + 6) - 1 && \text{distribute the 2} \\
&= 2x + 5 && \text{combining like terms}
\end{aligned}
$$

Notice that the final expressions are very different, even though the instructions sounded very similar.