

NAME

DATE

PERIOD

## Lesson 10 Summary

Equations can be solved in many ways. In this lesson, we focused on equations with a specific structure, and two specific ways to solve them.

Suppose we are trying to solve the equation  $\frac{4}{5}(x + 27) = 16$ . Two useful approaches are:

- divide each side by  $\frac{4}{5}$
- apply the distributive property

In order to decide which approach is better, we can look at the numbers and think about which would be easier to compute. We notice that  $\frac{4}{5} \cdot 27$  will be hard, because 27 isn't divisible by 5. But  $16 \div \frac{4}{5}$  gives us  $16 \cdot \frac{5}{4}$ , and 16 is divisible by 4. Dividing each side by  $\frac{4}{5}$  gives:

$$\begin{aligned}\frac{4}{5}(x + 27) &= 16 \\ \frac{5}{4} \cdot \frac{4}{5}(x + 27) &= 16 \cdot \frac{5}{4} \\ x + 27 &= 20 \\ x &= -7\end{aligned}$$

Sometimes the calculations are simpler if we first use the distributive property. Let's look at the equation  $100(x + 0.06) = 21$ . If we first divide each side by 100, we get  $\frac{21}{100}$  or 0.21 on the right side of the equation. But if we use the distributive property first, we get an equation that only contains whole numbers.

$$\begin{aligned}100(x + 0.06) &= 21 \\ 100x + 6 &= 21 \\ 100x &= 15 \\ x &= \frac{15}{100}\end{aligned}$$