

RECAP 10

Name _____

Date _____

Using Linear Equations to Solve Real-World Problems

In this lesson, we

- used the Read–Represent–Solve–Summarize routine to analyze and answer questions about a situation.
- represented a situation with an equation.

Example

Repair company A charges a \$30 service fee and \$28 per hour. Repair company B charges a \$28 service fee and \$25 per hour. How many hours must each company work for the cost of a repair to be the same?

Read

What does this problem ask you to find?

How many hours must be worked by each company for the cost of a repair to be the same?

What do you know?

Company A: \$30 fee plus \$28 per hour

Company B: \$28 fee plus \$25 per hour

Let x represent the number of hours for a certain repair.

Represent

$$30 + 28x = 28 + 25x$$

$$30 + 3x = 28$$

$$3x = -2$$

$$x = -\frac{2}{3}$$

Check:

$$\text{Left side: } 30 + 28\left(-\frac{2}{3}\right) = 30 - 18\frac{2}{3} = 11\frac{1}{3}$$

$$\text{Right side: } 28 + 25\left(-\frac{2}{3}\right) = 28 - 16\frac{2}{3} = 11\frac{1}{3}$$

The cost of a certain repair from company A will never be the same as the cost of a certain repair from company B.

Solve

Does the result make sense?

Yes, the $-\frac{2}{3}$ checks when substituted in the expressions.

Does the result answer the question?

No, the variable represents an amount of time and time cannot be negative.

Summarize