

LESSON

Problem Solving**8-5****Solving Rational Equations and Inequalities**

Norton and Jessie sometimes work alone, and sometimes they work together.

1. Norton can mow a large lawn in 4.0 hours. When Norton and Jesse work together, they can mow the same lawn in 2.5 hours. How long would it take Jesse to mow the lawn if she worked by herself.
 - a. Write an expression for Jessie's rate, using j for the number of hours she would take to mow the lawn by herself.

$$\text{Rate} = \frac{\text{job}}{\text{time}} = \frac{1 \text{ job}}{j \text{ hours}} = \frac{1}{j}$$

- b. Write an equation to show the amount of work completed when they work together. _____
 - c. How long would it take Jessie to mow the lawn by herself? _____
2. Jessie can weed a garden in 30 minutes. When Norton helps her, they can weed the same garden in 20 minutes. How long would it take Norton to weed the garden if he worked by himself?
 - a. Write an expression for Norton's rate, using n for the number of hours he would take to weed the garden by himself. _____
 - b. Write an equation to show the amount of work completed when they work together. _____
 - c. How long would it take Norton to weed the garden by himself? _____

Choose the letter for the best answer.

3. Norton can edge a large lawn in about 3.0 hours. Jessie can edge a similar lawn in about 2.5 hours. Which equation could be used to find the time it would take them to edge that lawn if they worked together?

A $\frac{1}{3} - \frac{1}{2.5} = \frac{1}{t}$

B $\frac{1}{3} + \frac{1}{2.5} = \frac{1}{t}$

C $\frac{1}{3} + \frac{1}{2.5} = t$

LESSON

8-5

Problem Solving**Solving Rational Equations and Inequalities**

Norton and Jessie sometimes work alone, and sometimes they work together.

1. Norton can mow a large lawn in 4.0 hours. When Norton and Jesse work together, they can mow the same lawn in 2.5 hours. How long would it take Jesse to mow the lawn if she worked by herself.
- a. Write an expression for Jessie's rate, using j for the number of hours she would take to mow the lawn by herself.

$$\text{Rate} = \frac{\text{job}}{\text{time}} = \frac{1 \text{ job}}{j \text{ hours}} = \frac{1}{j}$$

- b. Write an equation to show the amount of work completed when they work together.

$$\left[\frac{1}{4}(2.5) \right] + \left[\frac{1}{j}(2.5) \right] = 1$$

- c. How long would it take Jessie to mow the lawn by herself?

$$6\frac{2}{3} \text{ h}$$

2. Jessie can weed a garden in 30 minutes. When Norton helps her, they can weed the same garden in 20 minutes. How long would it take Norton to weed the garden if he worked by himself?

- a. Write an expression for Norton's rate, using n for the number of hours he would take to weed the garden by himself.

$$\frac{1}{n}$$

- b. Write an equation to show the amount of work completed when they work together.

$$\left[\frac{1}{n}\left(\frac{1}{3}\right) \right] + \left[\frac{1}{\frac{1}{2}}\left(\frac{1}{3}\right) \right] = 1$$

- c. How long would it take Norton to weed the garden by himself?

$$1 \text{ h}$$

Choose the letter for the best answer.

3. Norton can edge a large lawn in about 3.0 hours. Jessie can edge a similar lawn in about 2.5 hours. Which equation could be used to find the time it would take them to edge that lawn if they worked together?

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