

Applications—Rational Equations

Consecutive integers: Remember that integers are only negative and positive “whole numbers”. They do not include any decimals or fractions.

Two consecutive integers: $x, x+1$

Two consecutive **odd** integers: $x, x+2$

Two consecutive **even** integers: $x, x+2$

Reciprocals: If the number is x , then its reciprocal would be $\frac{1}{x}$.

Define the variable. Write an equation. Solve.

1. The sum of a number and its reciprocal is $\frac{29}{10}$. What is the number?

2. The difference of the reciprocals of two consecutive integers is $\frac{1}{2}$. What are the integers?

3. The sum of the reciprocals of two consecutive even integers is $\frac{9}{40}$. What are the integers?

Work:

$$\frac{1}{\text{time alone}} + \frac{1}{\text{time alone}} = \frac{1}{\text{time together}}$$

4. Paris can wash her car in $4\frac{1}{2}$ hours. Her friend, Celia, can wash the same car in 7 hours. Working together, how long will it take them to wash the car?

5. Working together, Joseph and Dylan can write the computer program in 11 hours. Working alone, Joseph can write the computer program in 15 hours. How long does it take Dylan to write the program by himself?