

Assignment: Solve Rational Equations

Follow the directions to solve each problem. Show all work leading to your answer.

1. Shaun and Kendra want to scan old family photos into a computer photo organizing program. On his laptop Shaun can scan about five photos in three minutes. Kendra can scan about eight photos in five minutes on her computer. Working together, how many minutes (t) would it take for both of them to scan 36 photos?
 - a. Fill in the blanks in the table below to find the ratios to represent the various photo scanning rates. Then use the ratios to write a rational equation.

Shaun's Scanning Rate	+	Kendra's Scanning Rate	=	Combined Scanning Rate
$\frac{\text{___ photos}}{\text{___ minutes}}$	+	$\frac{\text{___ photos}}{\text{___ minutes}}$	=	$\frac{\text{___ photos}}{\text{___ minutes}}$

Equation: _____

- b. Identify the LCD for the equation. Solve the equation by multiplying both sides by the LCD. Show all the steps necessary to find the answer. Then write a sentence to describe what the answer means for this situation.
2. Ricardo plans to use two garden hoses to fill an above-ground swimming pool in his backyard. By itself, the first hose could fill the pool in 12 hours. The second hose could fill the pool in 10 hours. About how many hours (t) would it take if Ricardo uses both hoses to fill the pool?
 - a. Fill in the blanks in the table below to find the ratios to represent the various pool filling rates. Then use the ratios to write a rational equation.

First Garden Hose Fill Rate	+	Second Garden Hose Fill Rate	=	Combined Fill Rate
$\frac{\text{___ pool}}{\text{___ hours}}$	+	$\frac{\text{___ pool}}{\text{___ hours}}$	=	$\frac{\text{___ pool}}{\text{___ hours}}$

Equation: _____

- b. Identify the LCD for the equation. Solve the equation by multiplying both sides by the LCD. Show all the steps necessary to find the answer. Then write a sentence to describe what the answer means for this situation.
3. Professor Ma has a stack of 40 essays to grade. By herself, the professor can grade about five essays in two hours. Her teaching assistant, Chen, can grade about seven essays in three hours. About how many hours (t) would it take both of them to grade all 40 essays if they work together?
- a. Fill in the blanks in the table below to find the ratios to represent the various essay grading rates. Then use the ratios to write a rational equation.

Professor Ma's Grading Rate	+	Chen's Grading Rate	=	Combined Grading Rate
$\frac{\text{___ essays}}{\text{___ hours}}$	+	$\frac{\text{___ essays}}{\text{___ hours}}$	=	$\frac{\text{___ essays}}{\text{___ hours}}$

Equation: _____

- b. Identify the LCD for the equation. Solve the equation by multiplying both sides by the LCD. Show all the steps necessary to find the answer. Then write a sentence to describe what the answer means for this situation.
4. Next, write your own problem that can be solved with a rational equation. Think of a situation where two people (or things) can work together to finish a job in less time than it takes each of them to work alone.

- a. Write 3-4 sentences to describe the situation. Then ask a question that can be solved using a rational equation. Be sure to include enough information so that someone reading the problem can write an equation to solve the problem.
- b. Define the variable in the problem and create a table to organize the information described in your problem. Then use the contents of the table to write a rational equation.

Variable: _____

Rate #1	+	Rate #2	=	Combined Rate

Equation: _____

- c. Identify the LCD for the equation. Solve the equation by multiplying both sides by the LCD. Show all the steps necessary to find the answer. Then write a sentence to describe what the answer means for this situation.