

Quiz 8

Key

This is a two-stage quiz. In the first stage you have 15 min to use your knowledge & calculator to take this quiz. In the second stage, you are welcome to use your books, notes, and students in the class to retake the same quiz. You have 15 min. to write one solution (with everyone's name on it!!!) to be turned in for the group.

Show *all* your work. You do not need to explain your steps as you would to a 3rd grader, just provide enough work so credit can be given.

1. [4] Let a be a non-zero integer. Perform the following computations reporting your final answer either in a mixed number or as an improper fraction in lowest terms.

$\frac{2}{a} + \frac{1}{2a}$ (+.5) common denominator
 $\frac{2 \times 2}{2 \times a} + \frac{1}{2a}$ (+.5) fancy 1 ($\frac{2}{2}$)
 $\frac{4}{2a} + \frac{1}{2a}$ (+.5) num. add
 $\frac{4}{2a} + \frac{1}{2a}$
 $\frac{5}{2a}$

$4 \times 5 \frac{1}{a} = \frac{4}{1} \times (5 + \frac{1}{a})$ or $\frac{20a+4}{a}$
 $= \frac{4}{1} \times (\frac{5}{1} + \frac{1}{a})$
 $= \frac{4}{1} \times (\frac{5 \times a}{1 \times a} + \frac{1}{a})$
 $= \frac{4}{1} \times (\frac{5a+1}{a}) = \frac{4(5a+1)}{a}$ (+.5) mult across (+.5)

2. [2] Let a be a non-zero integer. The following work is wrong. Detect the error and try to detect the reason for the error:

$\frac{2}{x} \div 3 = 4$; write 3 as a fraction
 $\frac{2}{x} \div \frac{3}{1} = 4$; flip and multiply
 $\frac{x}{2} \times \frac{3}{1} = 4$; multiply both sides by 2
 $3x = 8$; divide both sides by 3
 $x = \frac{8}{3}$

The "flip and multiply" should be $\frac{2}{x} \times \frac{1}{3} = 4$
 (The fraction behind the \div sign is flipped)

3. Marcia has 350 feet of fence. After fencing in a square region, she has 110 feet of fence left. We want to find the length of one side of the square.

- (a) [2] Define variables and use the variables in an equation to capture what is described above. (+.5) let x be the length of one side of the square.
 (b) [2] Use the equation to find the length of the square.

(+.5) $350 - 4x = 110$ b) ie find x (+.5)
 $350 - 4x = 110$
 -350 -350
 $-4x = -240$
 $-\frac{4x}{-4} = \frac{-240}{-4}$
 $x = 60$
 So 60 feet (+.5)

somebody (+.5) both sides 1