

Fractions

Why do word problems involving fractions seem more difficult than other word problems?

Sometimes the very presence of a fraction in a word problem causes a certain amount of anxiety. Once this anxiety “kicks-in”, the brain quits working!

When this happens, replace the fractions in a word problem with whole numbers. Using the whole numbers, decide what math operation(s) must be done to solve the problem.

If those procedures are good for whole numbers, they must be good for fractions too.

Example

Given a 40 quart supply of antifreeze, how many cars could be serviced if each requires an average of $2\frac{1}{2}$ quarts of antifreeze?

You might have this narrowed this problem down to either multiplication or division. Which one is correct?

Maybe it would help to temporarily get rid of the fraction:

You could rewrite it like this...

Version A: Given a 40 quart supply of antifreeze, how many cars could be serviced if each requires an average of 1 quart of antifreeze?

...or like this...

Version B: Given a 40 quart supply of antifreeze, how many cars could be serviced if each requires an average of 2 quarts of antifreeze?

- In Version A, it should be pretty clear that you could service 40 autos since each auto needs 1 quart.
- In Version B, it should be evident that 20 autos can be serviced since each requires 2 quarts.

Now then, how did you arrive at your answer for these two versions of the original problem? *You had to divide the antifreeze supply (40 quarts) by the average amount required by each car. So if division is a good idea when working with the whole numbers, it must be a good idea when working with fractions:*

$$40 \div 2\frac{1}{2} = 16 \text{ autos}$$

Copyrighted.

Peter C. Esser and Southwest Wisconsin Technical College (2001)