

A Strategy for Mathematical Problem Solving – The First Step is Admitting You Have a Problem

1. **Read the problem carefully.** In particular, make sure that you understand what

	ratio of quotient of percent (read as “per cent”, meaning divide by 100)
Equals	Is, are, was, were, will be Gives, yields
A variable (x, etc.)	What What number

Percent Problems

Remember, a sale price is found by calculating 20% of the *original price* and subtracting it. It is not found by calculating 20% of the sale price. (After all, if we knew the sale price we wouldn't need to be doing more calculations to find it!)

A better way to approach this problem is to first ask yourself "20% of *what?*" Well, 20% of the original price, of course! We can now rephrase the problem:

The original price, minus 20% of the original price, is \$160.

Since the original price is our desired quantity, let's call it x . We can translate the above to

$$x - 20/100 * x = 160$$

Percentage problems always include a part and a whole. (e.g., "the part is 50% of the whole.") Be very careful that you understand which quantity is the part and which is the whole in a given problem.

Direct and Inverse Variation

Two quantities are said to be *directly proportional* (or to *vary directly*)

