Factors versus terms NAME:

It is very important to know why we can cancel the 3*y* out of $\frac{3yx}{3y}$ to yield *x* but we cannot cancel the 3*y* out of $\frac{3y+x}{3y}$.

The reason is because 3*y* is a **common factor** (between the top and bottom) in $\frac{3yx}{3y}$ and so we really have $\frac{3yx}{3y}=\frac{(3y)x}{(3y)}=\frac{3y}{3y}*x=1*x=x$.
Notice the 3*y* divided by itself is equal to 1 and therefore cancels out. (Remember any number divided by itself is 1. And 3*y* is just some number.)

This is not the case with $\frac{3y+x}{3y}$. The 3*y* is just a **term** on the top, because it's being added to something else. The 3*y* is a **common term** (between the top and bottom) and does not cancel out the way a common factor would.

To further examine this idea, plug numbers in for *x* and *y* to illustrate that $\frac{3yx}{3y}=x$ and that $\frac{3y+x}{3y}\neq x$. Label and circle your values for *x* and *y* as well as your values for $\frac{3yx}{3y}$ and $\frac{3y+x}{3y}$.

The language is important. **Factors are things we are multiplying together**, like 3, *y*, and *x* in 3*yx*. **Terms are things we are adding**, like 3*y* and *x* in 3*y* + *x*. I will use these words a great deal. Your life will be easier if you remember what they mean.