# Quadratic Factor Example
Math 130 *Kovitz*

Solve for $x$.

$$2x^2 + x - 3 = 0.$$

Decide on a method of solution. Then either leave the $x$ terms isolated on the left side (if completing the square) or set the right side to 0 (if factoring or using the quadratic formula).

*Do not* divide both sides by the coefficient after factoring out an $x$. That's definitely not correct; it is not a linear equation, so methods for solving a linear equation are not applicable.

It is always a good idea to check the solutions in the *original* equation, using a calculator if necessary.

$2x^2 + x - 3 = 0.$                Try to factor this expression. Use trial and error.

$(2x + 3)(x - 1) = 0.$          The numbers must have opposite signs and they must have a product of $-3$.

$x = -3/2 = -1.5$    or    $x = 1.$

## Check the answers.

$$2(-1.5)^2 - 1.5 - 3 = 4.5 - 1.5 - 3 = 0.$$

It checks.

and

$$2(1^2) + 1 - 3 = 2 + 1 - 3 = 0.$$

So, both answers check. A calculator could be used to check $-1.5$, but it is not absolutely necessary.