

Quadratic Relations: Day 1 – Factored Form and Standard Form  
Multiplying Constants and Variables

$2 \times 2 = \underline{\quad}$	$2^2 = \underline{\quad}$
$3 \times 3 = \underline{\quad}$	$3^2 = \underline{\quad}$
$4 \times 4 = \underline{\quad}$	$4^2 = \underline{\quad}$
$5 \times 5 = \underline{\quad}$	$5^2 = \underline{\quad}$
$6 \times 6 = \underline{\quad}$	$6^2 = \underline{\quad}$

Therefore,  $x \times x = \underline{\quad}$

When multiplying a **constant** (1, -1, 2, -2, etc...) by a **variable** (x, y, etc...) we simply combine the two.

This is because we do not know the value of the variable.

So, when you see  $2x$ , this really just means  $2 \times x$ .

$4 \times x = 4x$	$-2 \times x = -2x$	$1 \times x = x$	$-1 \times x = -x$
$-4 \times x = \underline{\quad}$	$14 \times x = \underline{\quad}$	$9 \times x = \underline{\quad}$	$-3 \times x = \underline{\quad}$
$-7 \times x = \underline{\quad}$	$6 \times x = \underline{\quad}$	$-24 \times x = \underline{\quad}$	$-91 \times x = \underline{\quad}$

When adding or subtracting variable terms we just add or subtract the constants on the term and keep the variable.

\*\*We can only add or subtract like terms! (4x and -6x are like terms, 3x and -2y are NOT like terms, 5 and 3x are NOT like terms)

$4x + 2x = 6x$	$5x - 3x = 2x$	$6x + x = 7x$	$2x - 8x = -6x$
$x + 2x = \underline{\quad}$	$x - 2x = \underline{\quad}$	$3x + 4x = \underline{\quad}$	$3x - 4x = \underline{\quad}$
$x + x = \underline{\quad}$	$-x - x = \underline{\quad}$	$-3x + 8x = \underline{\quad}$	$-9x + 4x = \underline{\quad}$
$-x + 3x = \underline{\quad}$	$-5x + 4x = \underline{\quad}$	$x - x = \underline{\quad}$	$8x - 20x = \underline{\quad}$

When multiplying terms, always remember that if the **signs are different** you get a **negative** number and if the **signs are the same** you get a **positive** number!

$+$	$\times$	$+$	$=$	$+$	$+$	$\times$	$-$	$=$	$-$
$-$	$\times$	$+$	$=$	$-$	$-$	$\times$	$-$	$=$	$+$