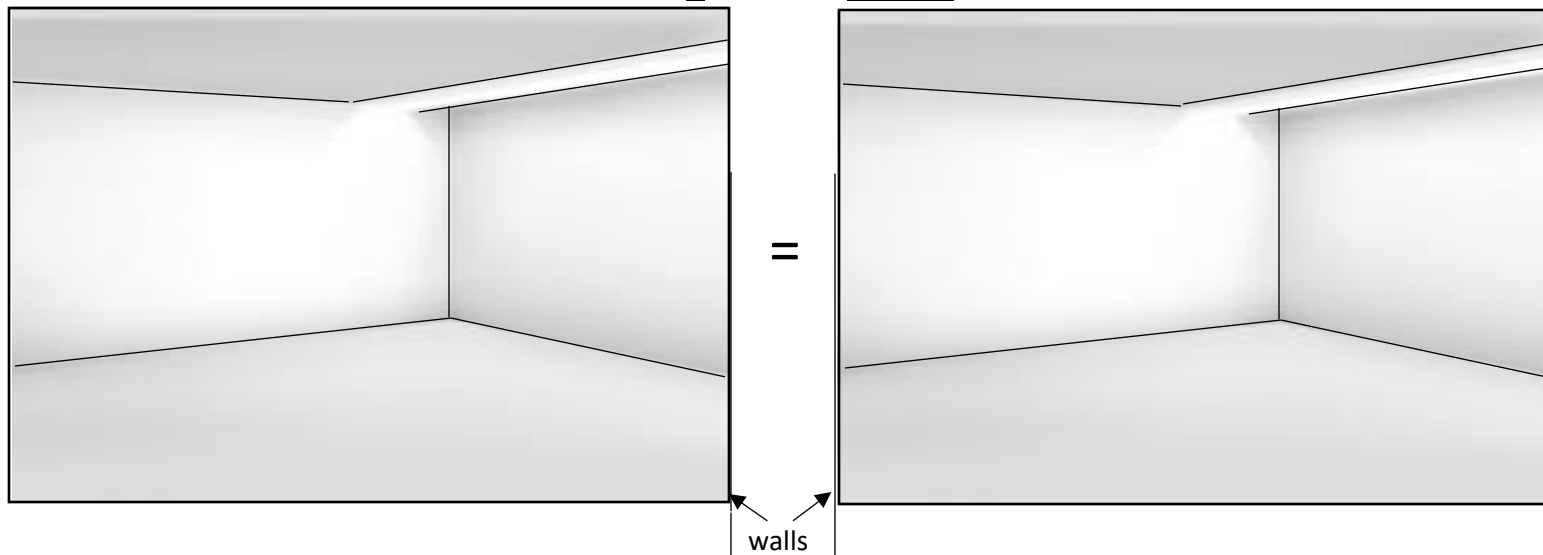# The Tale of Two Rooms:

**When solving equations, split the problem into 2 rooms by putting walls up around the equal sign.**

**Your goal is to get <u>1</u> variable <u>ALONE</u> in one of the rooms.**



=

walls

**D:** | **DISTRIBUTE:** If there are parenthesis in the problem, **ALWAYS** distribute **FIRST** to get rid of them
(Remember, distribute means MULTIPLY and don't forget to multiply <u>all the way through</u>)

$$3(x + 3) \mid = \mid 27$$
$$3x + 9 \mid = \mid 27$$

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## When there is more than one variable in the problem, determine if they are:

| In the <u>**SAME**</u> room (same side of the equal sign) | In <u>**DIFFERENT**</u> rooms (different sides of the equal sign) |
|---|---|
| If they are on the **SAME** side, you | If they are on **DIFFERENT** sides, you |

**C:** | **COMBINE:** Follow integer rules (T-chart)*
to properly COMBINE the like terms.

| **T-Chart** | |
|---|---|
| **-** | **+** |
| **6x** | **3x** |

$$3x - 6x + 9 \mid = \mid 18$$
$$-3x + 9 \mid = \mid 18$$

Same side:
combine to get -3x

**E:** | **ELIMINATE:** Use the INVERSE OPERATION to
MOVE all the variables into one room.
(Usually move the smaller variable)

$$3x + 9 \mid = \mid 6x + 18$$
$$-3x \mid = \mid -3x$$
$$9 \mid = \mid 3x + 18$$

inverse operation

Different sides: inverse
operation to get 3x

## Always Combine <u>**BEFORE**</u> Eliminating