Algebra – Balance Strategies

Recall – we can use the inverse operation to reverse or "undo" another operation in order to isolate x.

 To reverse 4x (multiplication) we need to multiply by 4

To reverse $\frac{x}{3}$ (division) we need to _____ by _____

To reverse x-5 (subtraction) we need to _____ _____

To reverse x + 2 (addition) we need to _____ _____

To reverse x + (-2) we can either subtract (_____) OR add (_____) [the opposite of -2].

Using Balance Strategies to Solve Equations With Variables in Two Places

Solve 4a + 6 = 7a

First, draw algebra tiles on each side of the balance.

In order to keep the scale balanced (=), **whatever you do to the left side, you must also do to the right and vice versa.**

4a + 6 = 7a

What is the easiest way
To leave only one pile of
"a"
On one side?

Remove _____ a tiles from
the

_____ side.

Now, we need to isolate a by
itself.

We can do so by "undoing"
the
Multiplication by
_____by _____

Ex. 6x + 2 = 10 + 4x

Hint: try to manipulate
the equation so "x" is
on one side only and
the known values are
on the other side.

Ex. -3c + 7 = 2c − 8

Ex. 2(3x-3) = 6

Ex. 4(2x+1) = 7