LIVEMATH JumpStart Lesson 4 : Algebra

Isolate

If you have a single occurence of a variable inside layers of algebraic operations you can dig it out by Isolating it on one side of the equal sign. Highlight the variable and click on the Isolate button  in the palette.

$$3+\sqrt{\frac{(x^2-1)+2}{3}}=34$$

$x=\sqrt{2882}$ Isolate

$$3=x^2+y^2$$

$y=(-x^2+3)^{\frac{1}{2}}$ Isolate

Substitute

As you saw in an earlier notebook substitutions can be accomplished by dragging assignments onto equations. Substitution is also available via the palette.

Highlight the definition equation.
Hold down the SHIFT key. Highlight where you want this definition substituted.

Click the substitute button  in the palette.

$f(\square)=\square^2+1$

$f(x)=10$

$x^2+1=10$ Substitute

LiveMath will create a result statement with the substitution.

MoveOver

MoveOver was also introduced earlier.

And, it also has a palette button  .
Click on the term you would like to move to the other side of the equal side and click the button.

$5x+8=7x-2$

$-2x+8=-2$ Move Over

Commute

As you are algebraically manipulating expressions you may want to switch the order that terms appear. This is called commuting. Highlight the terms and click the Commute button  .

$x+y+z+w+u+v$

$x+y+z+w+u+v=x+y+(w+z)+u+v$ Commute

Now It's Your Turn... Follow the directions below to get hands on experience.

1.

Isolate x in the equation

$$2 - \sqrt{\frac{x + 1}{5}} - y = 25$$

2.

Substitute the definition of f(x) into the given equation.

$f(x) = x^2 + 1$

$f(x) - 4 = 25 + x$

3.

Move the x on the right hand side over to the left hand side.

$6\,x - y + 3 = x + 5\,y - 8$

Reverse the order of x and y terms in the following expression

$2 + 3\,x - 5\,y + z$