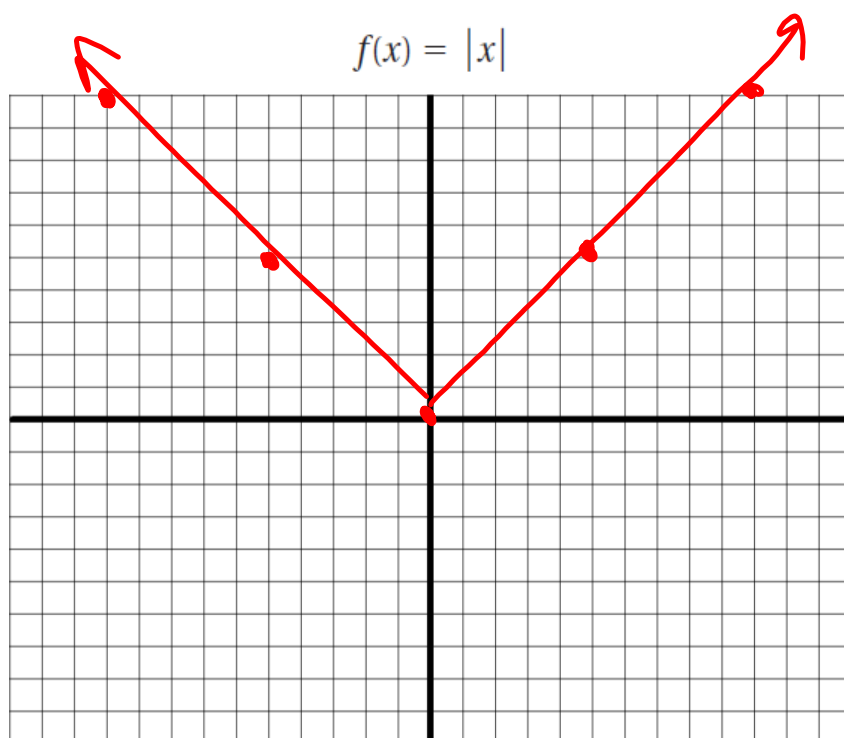


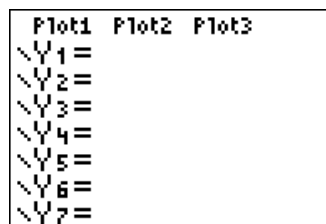
Investigating Algebra **ACTIVITY****2.7 Exploring Transformations**

Graph an absolute value function:

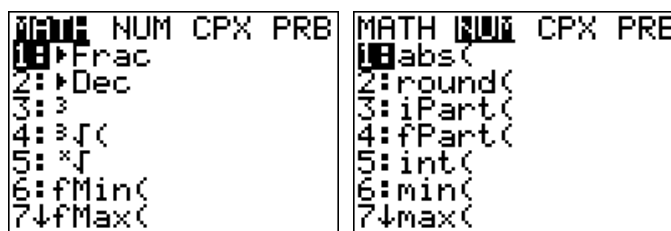
x	$f(x)$
-10	10
-5	5
0	0
5	5
10	10



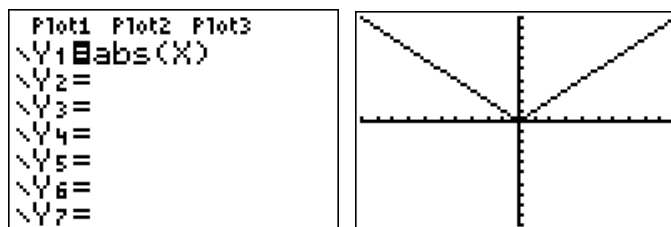
To graph absolute value on the calculator, first go to Y=



Next, press MATH, then right to NUM, then abs(



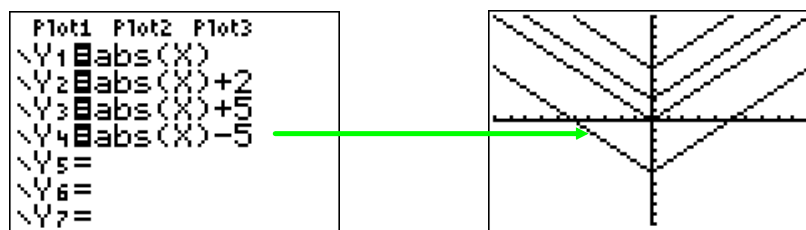
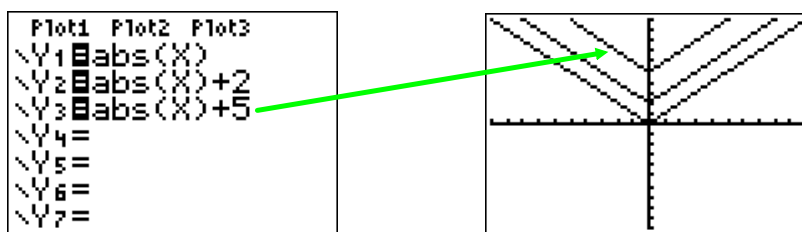
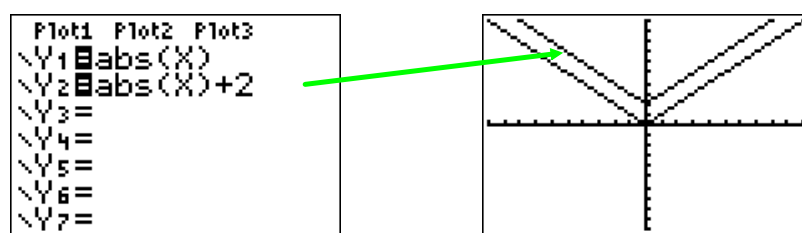
Finish typing in the equation and press GRAPH



This is your parent function graph. Leave it in Y= so we can compare graphs.

Below are some samples of adding or subtracting a number on the outside of the absolute value.

How did the graph change?



By adding/subtracting numbers on the outside, we can shift our graph up or down.

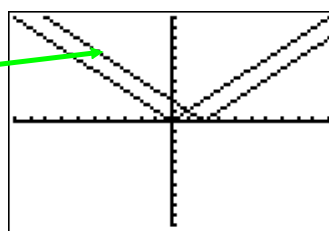
Below are some samples of adding or subtracting a number on the inside of the absolute value.

How did the graph change?

```

Plot1 Plot2 Plot3
Y1=abs(X)
Y2=abs(X-2)
Y3=
Y4=
Y5=
Y6=
Y7=

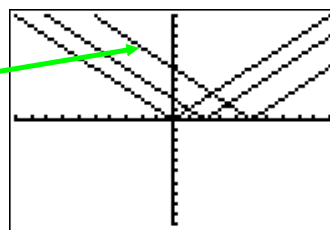
```



```

Plot1 Plot2 Plot3
Y1=abs(X)
Y2=abs(X-2)
Y3=abs(X-5)
Y4=
Y5=
Y6=
Y7=

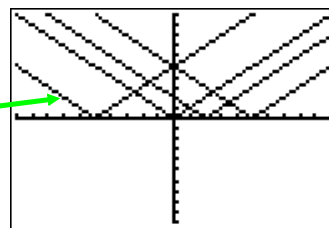
```



```

Plot1 Plot2 Plot3
Y1=abs(X)
Y2=abs(X-2)
Y3=abs(X-5)
Y4=abs(X+5)
Y5=
Y6=
Y7=

```



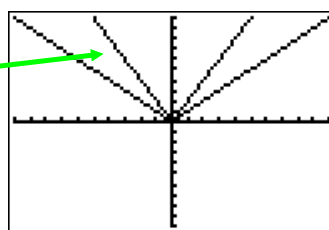
By adding/subtracting numbers on the inside, we can shift our graph left or right.

Below are some samples of multiplying a number on the outside of the absolute value.

How did the graph change?

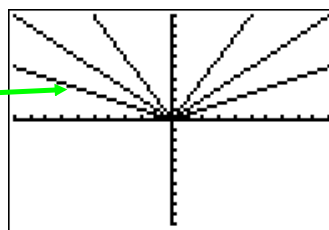
```

Plot1 Plot2 Plot3
Y1=abs(X)
Y2=2abs(X)
Y3=
Y4=
Y5=
Y6=
Y7=
  
```



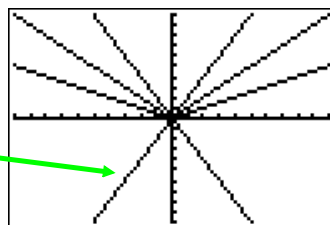
```

Plot1 Plot2 Plot3
Y1=abs(X)
Y2=2abs(X)
Y3=(1/2)abs(X)
Y4=
Y5=
Y6=
Y7=
  
```



```

Plot1 Plot2 Plot3
Y1=abs(X)
Y2=2abs(X)
Y3=(1/2)abs(X)
Y4=-2abs(X)
Y5=
Y6=
Y7=
  
```



By multiplying numbers on the outside, we can stretch or compress our graph vertically.
(Notice that negatives reflect our graphs over the x-axis)