Solving Quadratics Graphically
Reporting Category: Equations and Inequalities

Background Information:

Students will need to know how to identify a x-intercept and a y-intercept.
Students will need to have experience using the Y= function and the table function of the graphing calculator.

Materials and Equipment:

Graphing calculator and view screen
Overhead projector
Each student will need:
Graphing calculator and handouts

Notes to Teacher:

In this activity students "discover" the significance of numbers in the quadratic equation.
In this activity sheet, the equation, graph and table are ALREADY matched. You will need to make multiple copies to use this activity fully.
In this activity students will relate the equation of a quadratic to the graph of the quadratic and to a table of values.
Each piece of information may be used in more than one way…Suggestions:

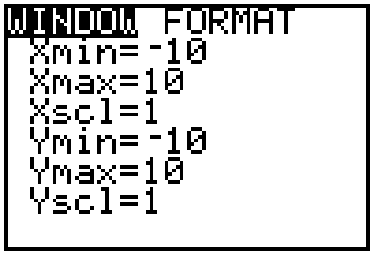
- Copy the handout, cut up the pieces, tape each on an card, you will want to number the cards and have a "key" card so you can do a quick check of the student's mathematics.
- Each day, hand out the index cards with the tables on them, have students find equation of their own quadratic.
- Repeat the activity at the beginning of class as a quick review daily.
- Repeat the process with the graph.

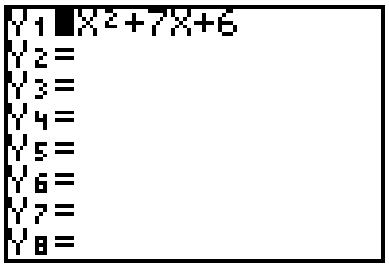
Bonus Repeat the process with the equation having the students sketch the graph or give you a table of values for the equation that they are holding. Relate the f(x) to the ordinate on the graph.

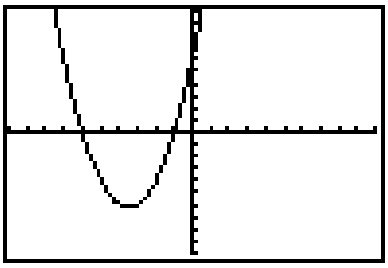
Bonus Discuss the stretching action of a GCF and how to determine if the graph has been stretched or shrunk and by what value. Discuss complex roots and why there are no real roots.

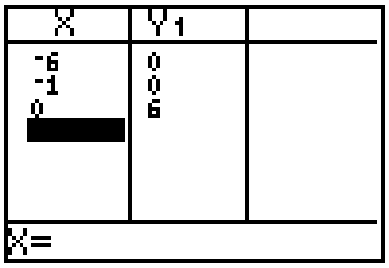
Students may work alone or in pairs on this activity.
The time allotted for this activity varies depending on the ability level of the students.

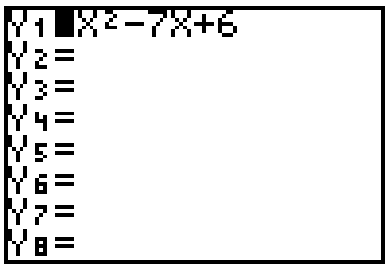
Activity Sheet: Match the quadratic equation to its graph and to its table of values.

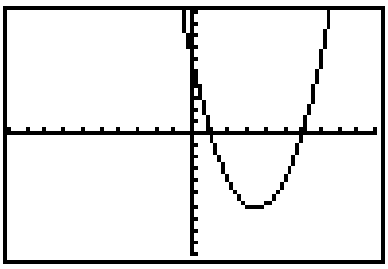


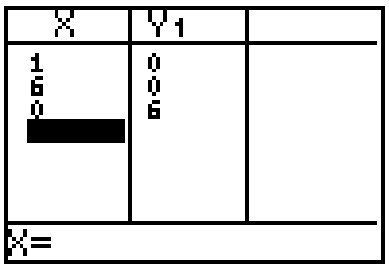


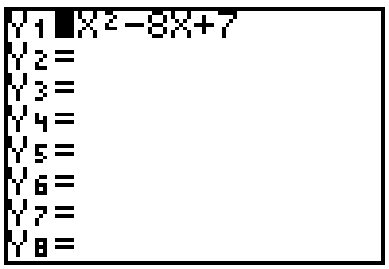


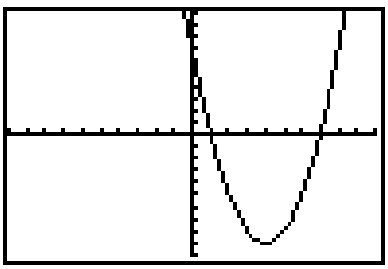


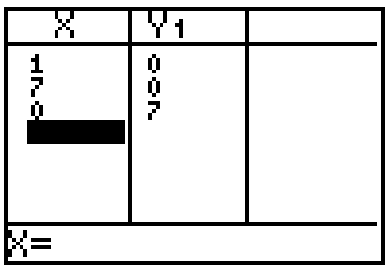


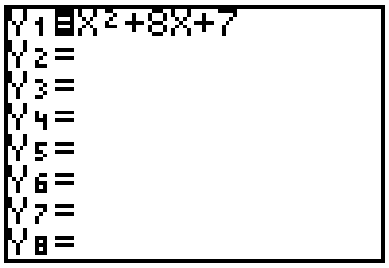


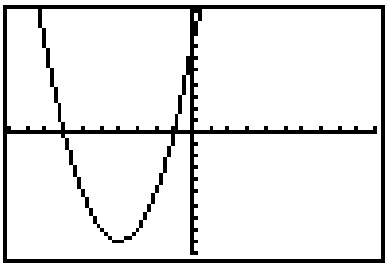


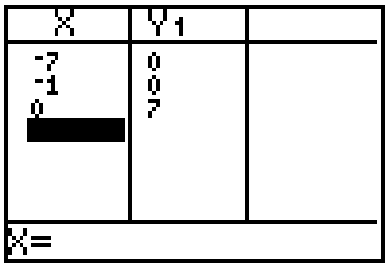


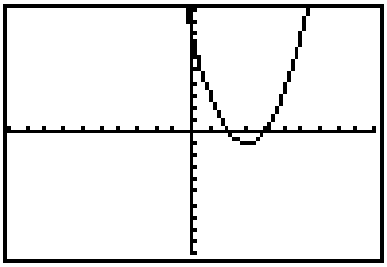
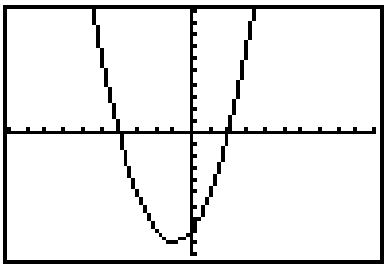
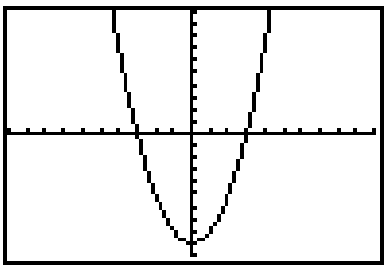
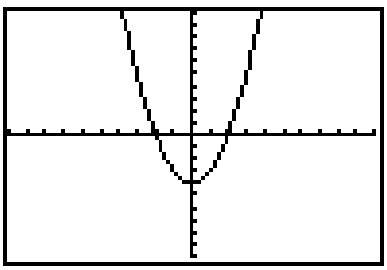
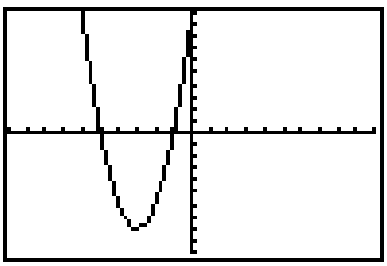
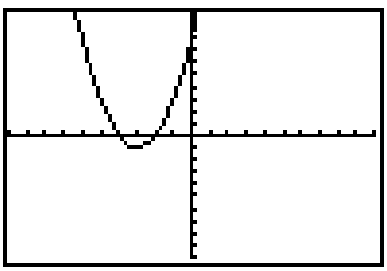


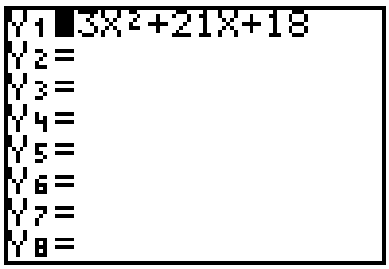








Y1=X²−6X+8 Y2= Y3= Y4= Y5= Y6= Y7= Y8=		X Y1 2 0 4 0 0 8 X=
Y1=X²+2X−8 Y2= Y3= Y4= Y5= Y6= Y7= Y8=		X Y1 -4 0 2 0 0 -8 X=
Y1=X²−9 Y2= Y3= Y4= Y5= Y6= Y7= Y8=		X Y1 -3 0 3 0 0 -9 X=
Y1=X²−4 Y2= Y3= Y4= Y5= Y6= Y7= Y8=		X Y1 -2 0 2 0 0 -4 X=
Y1=2X²+12X+10 Y2= Y3= Y4= Y5= Y6= Y7= Y8=		X Y1 -5 0 -1 0 0 10 X=
Y1=X²+6X+8 Y2= Y3= Y4= Y5= Y6= Y7= Y8=		X Y1 -4 0 -2 0 0 8 X=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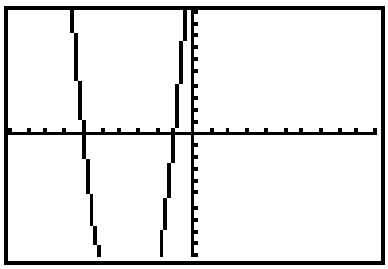
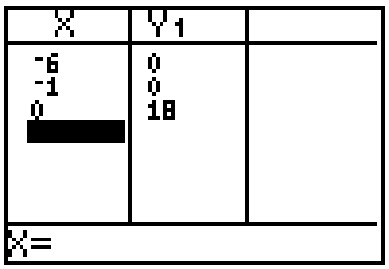
Y3=
Y4=
Y5=
Y6=
Y7=
Y8=




X Y1
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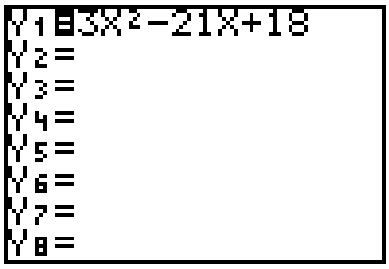
-1 0
0 18
X=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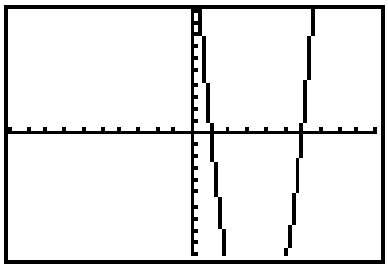
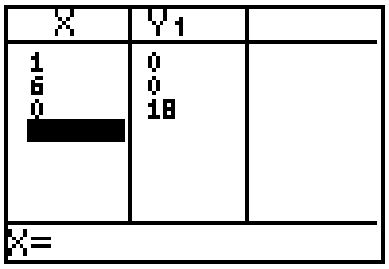
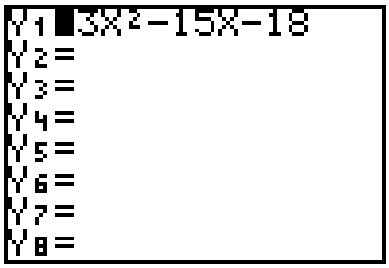
Y2=
Y3=
Y4=
Y5=
Y6=
Y7=
Y8=




X Y1
1 0
6 0
0 18
X=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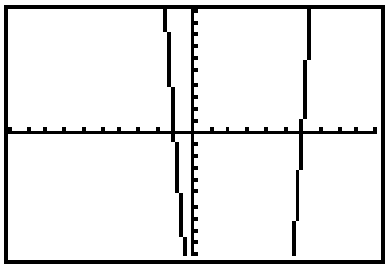
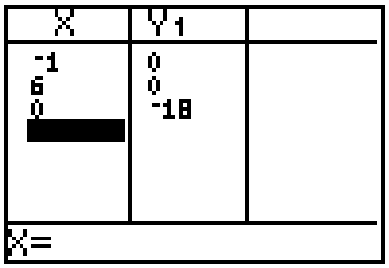
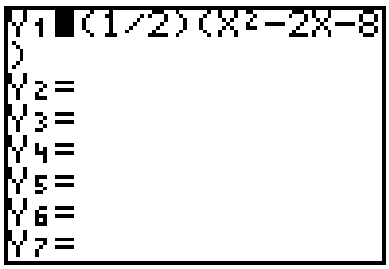
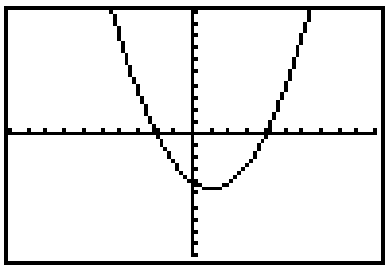
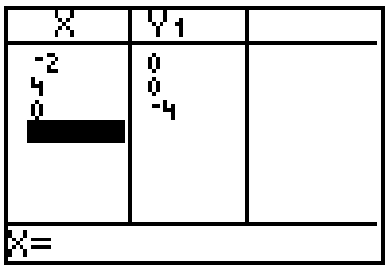
Y3=
Y4=
Y5=
Y6=
Y7=
Y8=




X Y1
-1 0
6 0
0 -18
X=


Y1=(1/2)(X²-2X-8
)
Y2=
Y3=
Y4=
Y5=
Y6=
Y7=




X Y1
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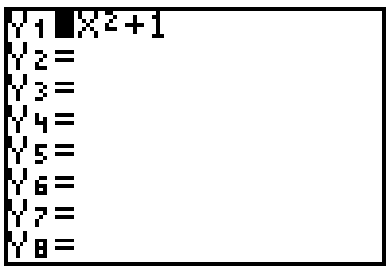
4 0
0 -4
X=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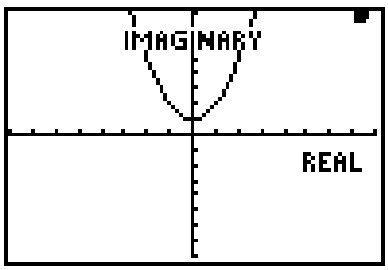
Y3=
Y4=
Y5=
Y6=
Y7=
Y8=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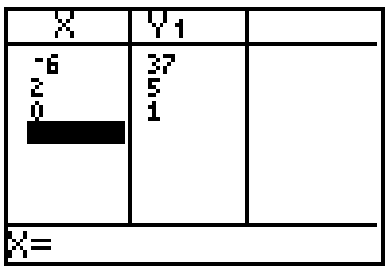
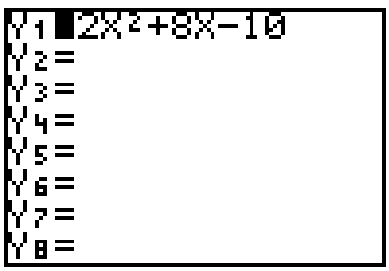

X Y1
-6 37
2 5
0 1
X=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Y2=
Y3=
Y4=
Y5=
Y6=
Y7=
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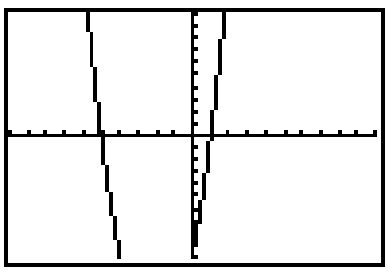
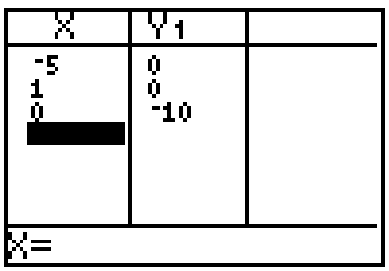
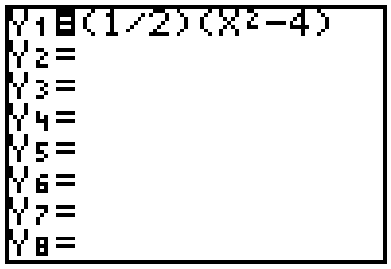
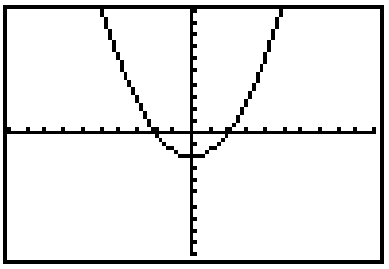
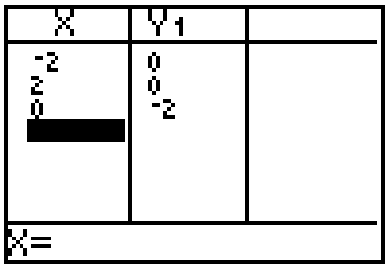
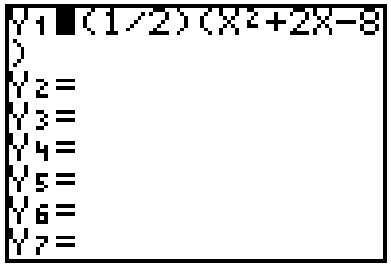


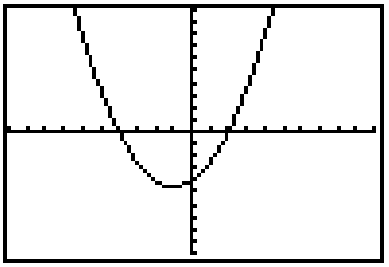

X Y1
-5 0
1 0
0 -10
X=

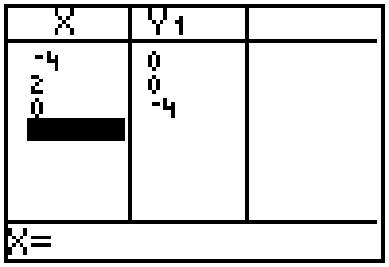


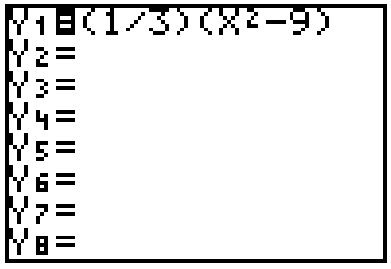


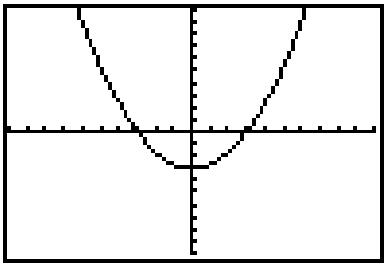


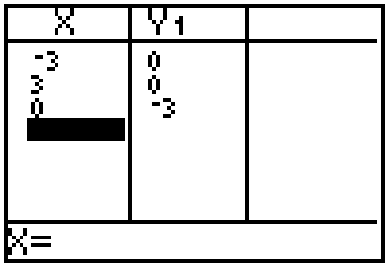










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