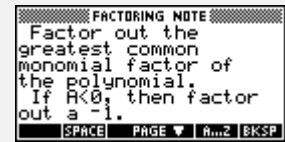


## Objectives:

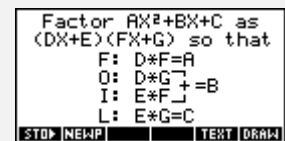
Using the **FACTORING** applet, the student will symbolically factor second degree trinomials in the form  $Ax^2+Bx+C$ .

## Functionality:

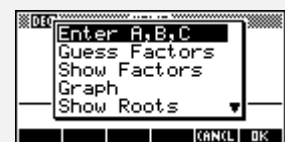
When the student presses **START** , the **FACTORING NOTE** will be displayed.



After reading the note, the student should view the **SKETCH** .



Pressing **VIEWS** will allow the student to enter the values of A, B, and C in the expression  $Ax^2+Bx+C$ , to guess the factors of the corresponding trinomial, to see the factors of the trinomial, to graph  $y = Ax^2+Bx+C$ , and to show the roots of  $y = Ax^2+Bx+C$ .



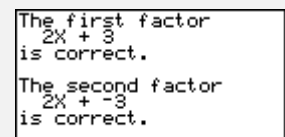
**Enter A, B, C** will prompt the student, through a series of input boxes, to enter the values of A, B, and C in the expression  $Ax^2+Bx+C$ .



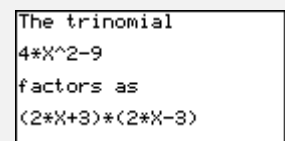
**Guess Factors** will prompt the student, through a series of input boxes, for the values of D, E, F, and G to factor the trinomial into  $(Dx+E)(Fx+G)$ .



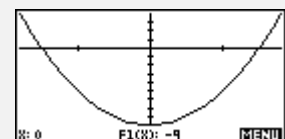
When the factors are entered, the calculator returns a message detailing the correctness of the students answer.



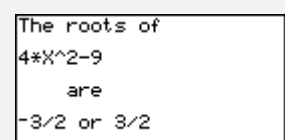
**Show Factors** displays the trinomial and its factors.



**Graph** displays the graph of  $y = Ax^2+Bx+C$ .



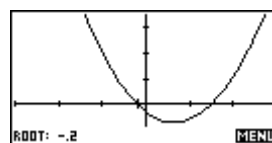
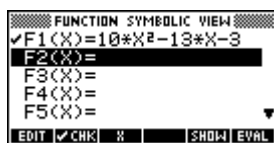
**Show Roots** displays the roots of the graph.



**Additional Exploration:**

Using the **Function** applet, plot any quadratic function. In the **PLOT SETUP**, choose an appropriate window that will show the any roots and the vertex. Use the **FNC** folder in the plot menu to find the roots. An example would be:

Find the roots of  $f(x)=10x^2-13x-3$ .



Programs associated with this applet:

.FA.CO, .FA.FA, .FA.SA, .FA.GR, .FA.SR, .FA.ST, .FA.SV