Linear Equation Family: Y = Ax + B

A. What is the equation of the red line?

B. To review, how does the value of A affect the graph of the line?

C. For positive values of B, is the y-intercept above or below the x-axis?

D. For negative values of B, is the y-intercept above or below the x-axis?

E. How does changing the value of B affect the graphs whose equation is of the form Y = AX +B?

F. Describe and compare the graphs $y = 2x – 2$ and $y = 2x + 1.5$.

G. Describe and compare the graphs $y = 1.5x – 1$ and $y = -2x – 1$.

H. What is the equation of the black line in #10?

The Dynamic Graph Feature: $Y=Ax^2+BX+C$

A) Summarize how changing the value of A affects the graph of the function.

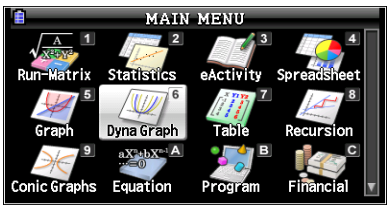
B) What happens to the graph of the function as the value of |A| increases? In other words, what happens to the graph of the function if A is positive and you increase its value?

C) Summarize how changing the value of C affects the graph of the function.

D) Summarize how changing the value of B affects the graph of the function.

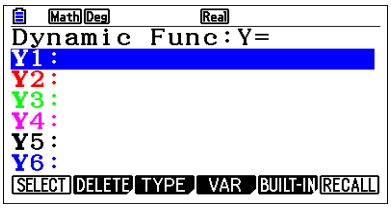
Dynamic Graphing on the PRIZM

Set your V-WINDOW to [F1] (INITIAL)

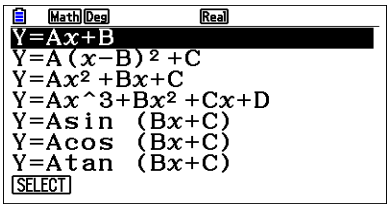


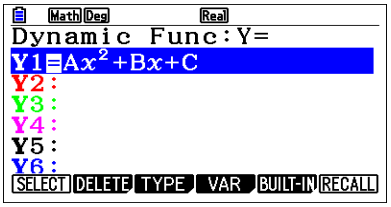
1. From the Main Menu ([MENU]), select the Dynamic Graph icon ([6]). This feature can be used to draw multiple versions of a graph by changing the values in a function.

2. If there are any equations stored on the Y= Screen, delete them at this time.

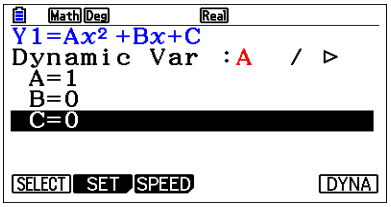


3. Press [F5] (BUILT-IN). You can select one of the built in functions listed on the screen or create your own. Select $Y=Ax^2 + Bx + C$.



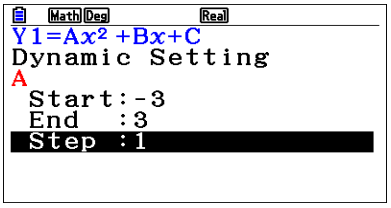


4. Press [F4] (VAR) to choose the variable that you want to make dynamic. Use ▲ or ▼ followed by [F1] (SELECT) to choose the variable, which is shown in red.



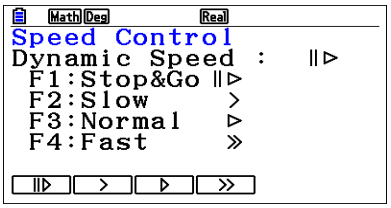
5. Press [F2] (SET) to set the minimum and maximum values for the variable that you selected to make dynamic.

Then press [EXIT].

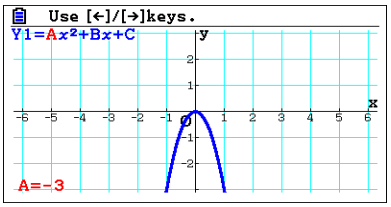


6. Press F3 (SPEED) to select how you want to animate the graph of the function. Press F1 for "Stop and Go."

Then press EXIT.



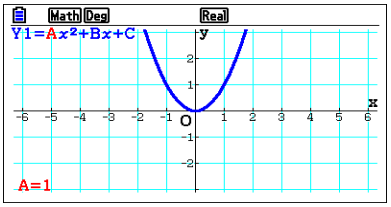
7. Press F6 (DYNA) to see the graph. Press EXE to explore how the graph changes as the value of the dynamic variable changes. Or use the arrow keys.



8. Press AC/ON to return to the "Dynamic Setting" screen.

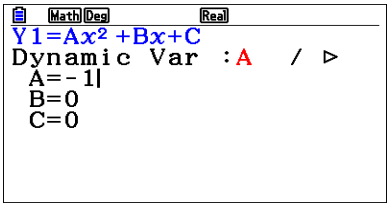
Press EXIT to return to the "Dynamic Variable" screen.

Press EXIT once more to return to the Equation Editor.



9. The graph becomes dynamic automatically if you choose as one of the (SPEED) options:

F2:Slow
F3:Normal
F4:Fast



10. Explore the effect of changing the values of C and B on the graph of the function. What effect does each variable have on the graph of the function?