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.

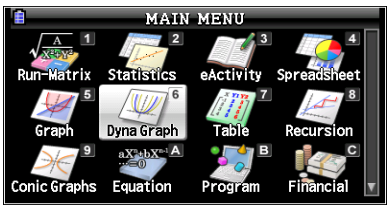
B) What happens to the graph of the function as the value of |A| increases? In other words, what happens to the graph of the function if A is positive and you increase its value?

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.

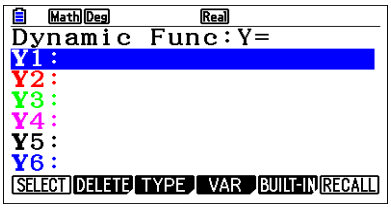
Dynamic Graphing on the PRIZM

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

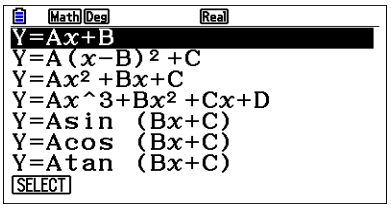


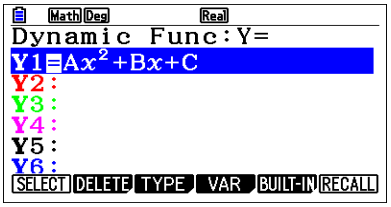
1. From the Main Menu ([MENU]), select the Dynamic Graph icon ([6]). This feature can be used to draw multiple versions of a graph by changing the values in a function.

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

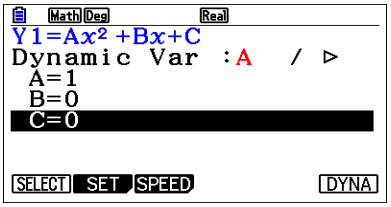


3. Press [F5] (BUILT-IN). You can select one of the built in functions listed on the screen or create your own. Select $Y=Ax^2 + Bx + C$.



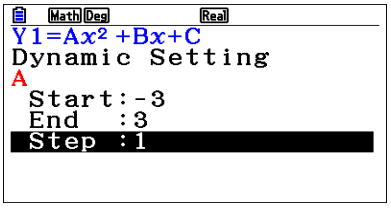


4. Press [F4] (VAR) to choose the variable that you want to make dynamic. Use ▲ or ▼ followed by [F1] (SELECT) to choose the variable, which is shown in red.



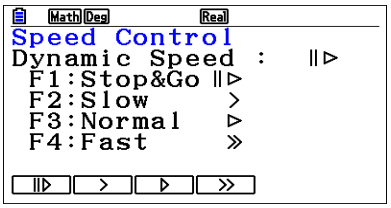
5. Press [F2] (SET) to set the minimum and maximum values for the variable that you selected to make dynamic.

Then press [EXIT].

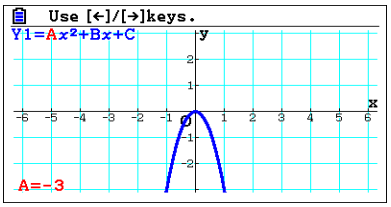


6. Press [F3] (SPEED) to select how you want to animate the graph of the function. Press [F1] for "Stop and Go."

Then press [EXIT].



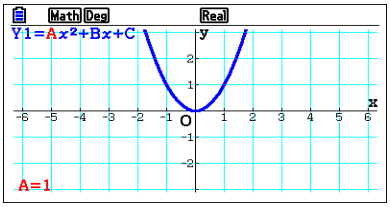
7. Press [F6] (DYNA) to see the graph. Press [EXE] to explore how the graph changes as the value of the dynamic variable changes. Or use the arrow keys.



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

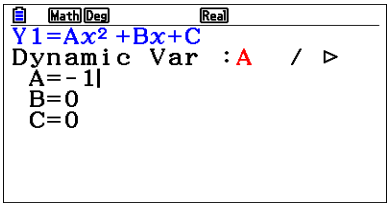
Press [EXIT] to return to the "Dynamic Variable" screen.

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?