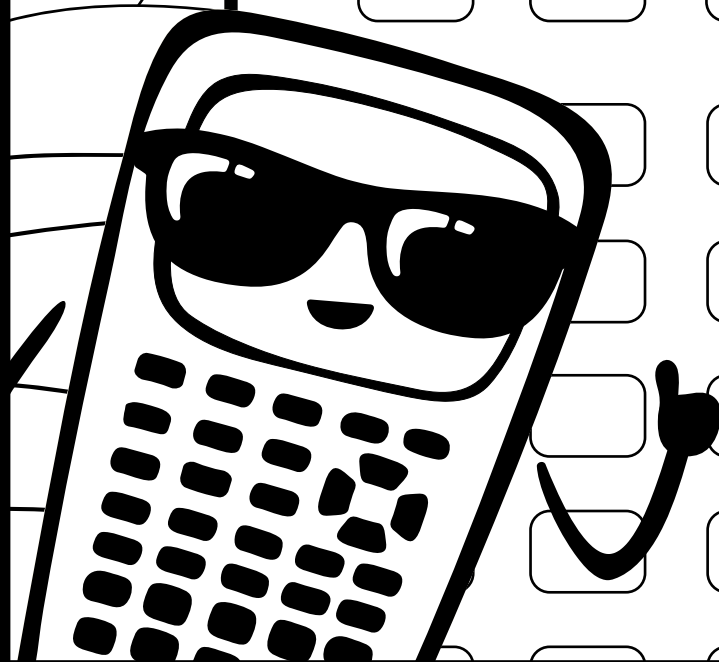
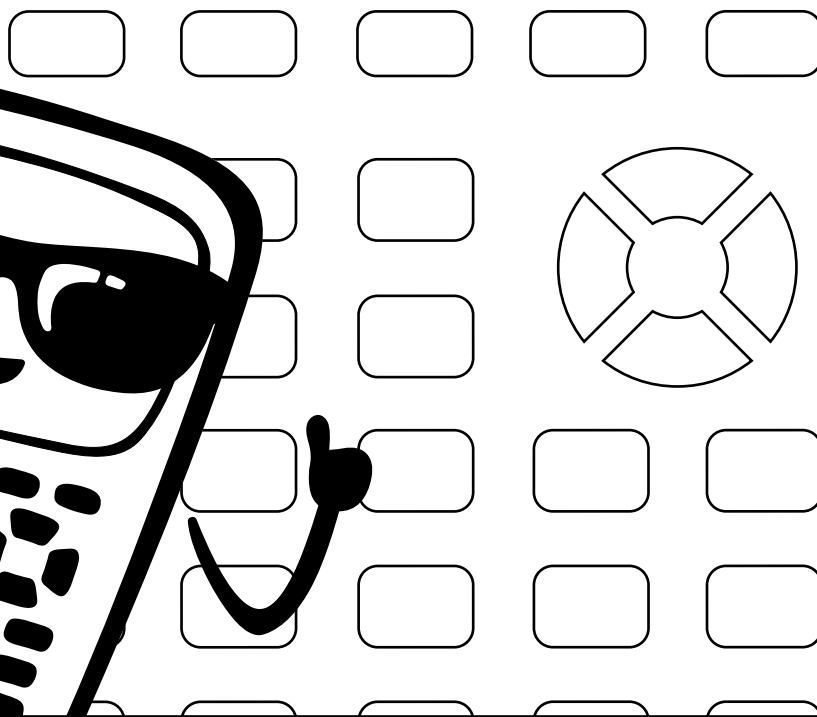
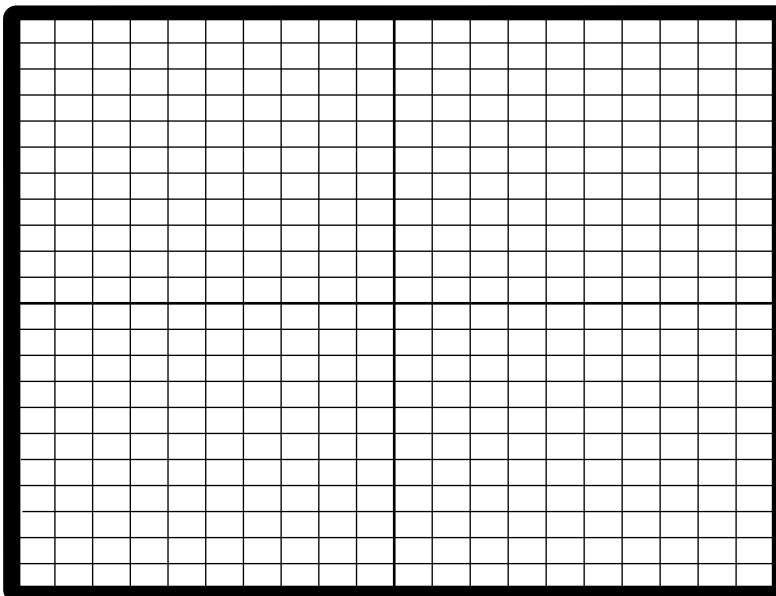


TI-84 Plus CE



Use the equations and color key sheet
to draw a secret image on the graph.

Navy

$$f(x) \leq \begin{cases} (-\frac{1}{4})(x+3)^2 + 3; & -5 < x < -1 \\ 2; & -1 < x < 1 \\ (-\frac{1}{4})(x-3)^2 + 3; & 1 < x < 5 \end{cases}$$

$$f(x) \geq \begin{cases} (\frac{3}{4})(x+3)^2 - 1; & -5 < x < -3 \\ (\frac{1}{2})(x+3)^2 - 1; & -3 < x < -1 \\ 1; & -1 < x < 1 \\ (\frac{1}{2})(x-3)^2 - 1; & 1 < x < 3 \\ (\frac{3}{4})(x-3)^2 - 1; & 3 < x < 5 \end{cases}$$

$$f(x) = \begin{cases} x+7; & -5 < x < 0 \\ -x^2+7; & 0 < x < 1 \end{cases}$$

$$f(x) = \begin{cases} -2x+12; & 3 < x < 5 \\ -(x-3)^2+6; & 2 < x < 3 \end{cases}$$

Magenta

Color in your shape with Magenta.

Yellow

Color the background yellow.

Next, graph the equations on your calculator using the
Inequalities Application. How do your images compare?

Graph your work

First, color your background with a yellow grid line:



Toggle to the

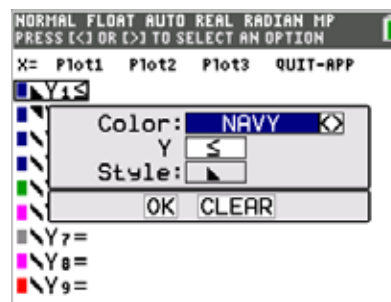
Next, turn on the Inequalities Application:  Select: 5: Inequalz


Enter equations into the  screen

To change colors and inequality symbols: Arrow left until the desired $Yx =$ line is outlined with a box. Press enter.

Hint: pay attention to the inequality symbols.

Use the dialogue box to select settings.



To enter multiple functions in a $Yx =$ row, use the piecewise template:  Select: B: piecewise(

Use dialogue box to select quantity of pieces per $Yx =$ line.

Hint: when you see $f(x)$ use the piecewise template.

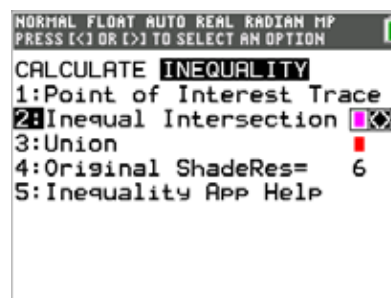


 your work when all math is entered. Double check your equations.

Fill in your shape for the final reveal:



2: Inequal Intersection, select magenta



Sunglasses - teacher notes

Hidden image reveal: Sunglasses! Share this image with your students when you see fit.

Reminders: Take note of the inequality symbols on Yx lines to get the proper shaded in areas to produce the designs.

When entering multiple functions per Yx line, use the piecewise template.

The last step to fill in the shape is crucial to get the desired reveal.

Experiment! Using color, line and background settings, how could students make the image their own?

How could they alter the math to make their own designs?

