

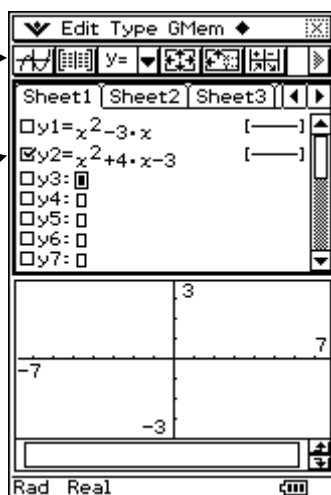
Quick reference guide for the ClassPad's Graph Application W

To begin, tap **m** and then **W**

Tap **\$** to **display graph**.

**Only checked equations will graph.**

You can tap the box to check or uncheck.



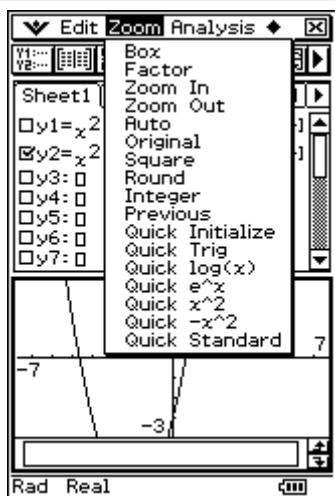
**Other useful things:**

# - opens a table of values for checked graph/s

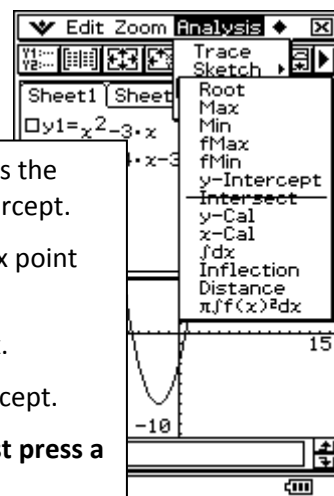
8 - lets you change table start and end values

**Type** menu – lets you change the kind of curve you are graphing

After graphing, you have many zoom options.  
The **Zoom** menu, the **+ or – key** and the **cursor pad**.



The **Analysis/G-Solve** sub-menu is great!!!



**Root** – use to find x-intercept. Press the cursor pad to jump to the next intercept.

**Max or Min** – use to find the vertex point and axis of symmetry.

**y-Cal** – use to find y-value for any x.

**y-Intercept** – use to find the y-intercept.

Note: When in the **Trace** mode, just press a **number** and a dialog will open ☺



Use the **cursor pad arrows** to quickly adjust/pan the graph window up, down, left or right! Enjoy exploring.

Before beginning the actual worksheet, please complete this practice activity to get used to the Graph application.

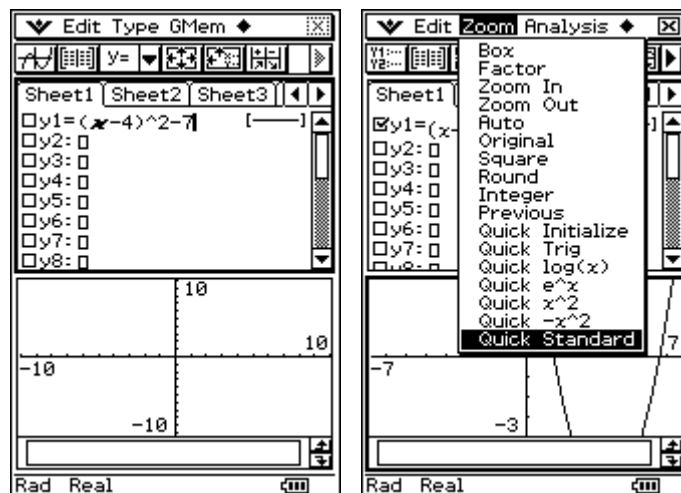
### Practice Activity

Graph  $y = (x - 4)^2 - 7$  and then find (1) the vertex point (turning point), (2) axis of symmetry, (3) y-intercept and (4) x-intercept/s.

1. To graph  $y = (x - 4)^2 - 7$

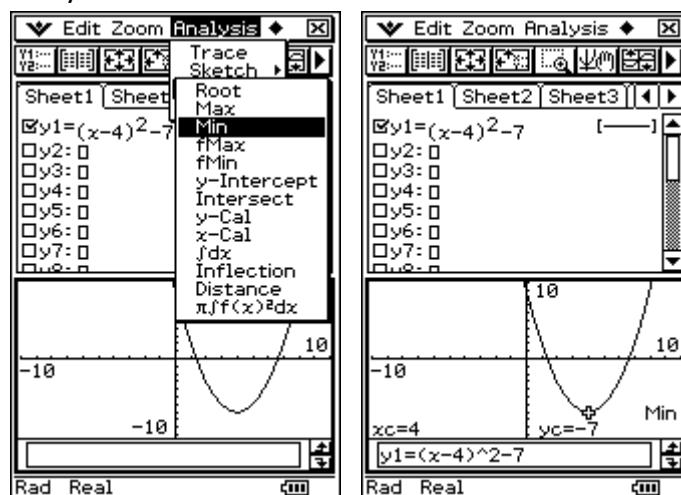
- Tap **m** and then **W**
- Select **Edit/Clear All** if needed
- Tap in the box following **y1** and input  $(x-4)^2-7$
- Press **EXE** (This sets the graph)
- Tap the **\$** button to graph
- While the graph window has focus, select **Zoom/Quick Standard**

\*At this point, we need to see the vertex point (turning point in the window. You can zoom, press the – key, use the cursor pad, ..., many options.



2. To find the Vertex Point and Axis of Symmetry

- Tap in the graph window to give it focus
- Select **Analysis/G-Solve** and then **Min** (our graph has a minimum pt)
- The vertex pt is (4,-7)
- The Axis of Symmetry is the **vertical line** passing through the vertex point, namely **x=4**



3. To find the y-Intercept

- Select **Analysis/G-Solve** and then **y-Intercept**.
- You should get (0,9)!

4. To find x-Intercept/s

- Select **Analysis/G-Solve** and then **Root**. The first intercept is approximately (1.35, 0).
- Tap the **right arrow on the cursor pad** to jump to the next intercept. Tap the left arrow to go back!

For each of the following, graph the equation using the ClassPad, find the vertex point, axis of symmetry, x-intercept/s and y-intercept and then sketch the graph. Be sure to label the vertex point and draw the axis of symmetry for each graph.

1. Graph  $y = (x - 2)^2 - 3$

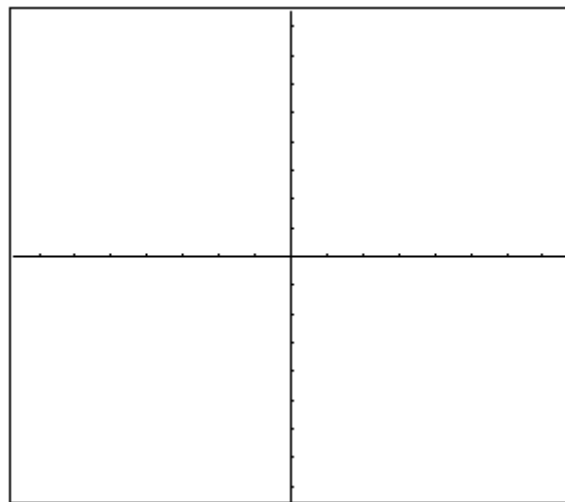
Complete:

Vertex Point: \_\_\_\_\_

Axis of Symmetry: \_\_\_\_\_

x-Intercept/s: \_\_\_\_\_

y-Intercept: \_\_\_\_\_



2. Graph  $y = (x + 2)^2 - 3$  [Hint: Drag and drop y1 to y2 and edit the equation. Uncheck y1.]

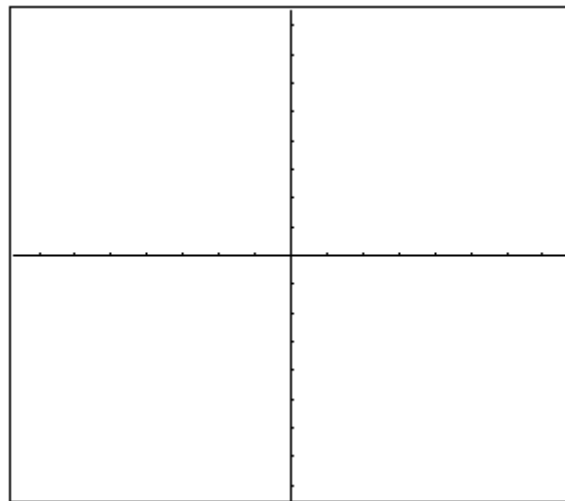
Complete:

Vertex Point: \_\_\_\_\_

Axis of Symmetry: \_\_\_\_\_

x-Intercept/s: \_\_\_\_\_

y-Intercept: \_\_\_\_\_



3. Graph  $y = -2(x-1)^2 + 4$

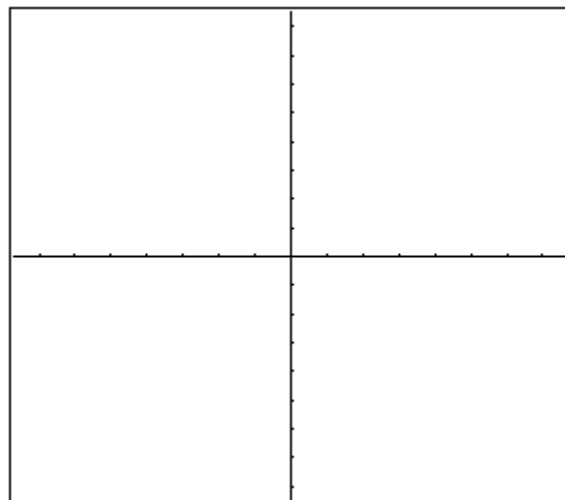
Complete:

Vertex Point: \_\_\_\_\_

Axis of Symmetry: \_\_\_\_\_

x-Intercept/s: \_\_\_\_\_

y-Intercept: \_\_\_\_\_



4. Graph  $g(x) = -.5(x+7)^2 - 1$

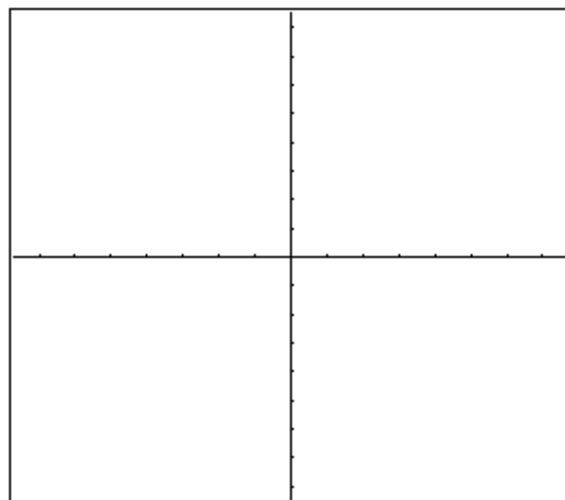
Complete:

Vertex Point: \_\_\_\_\_

Axis of Symmetry: \_\_\_\_\_

x-Intercept/s: \_\_\_\_\_

y-Intercept: \_\_\_\_\_



5. Graph  $f(x) = 3(x-4)^2 + 1$

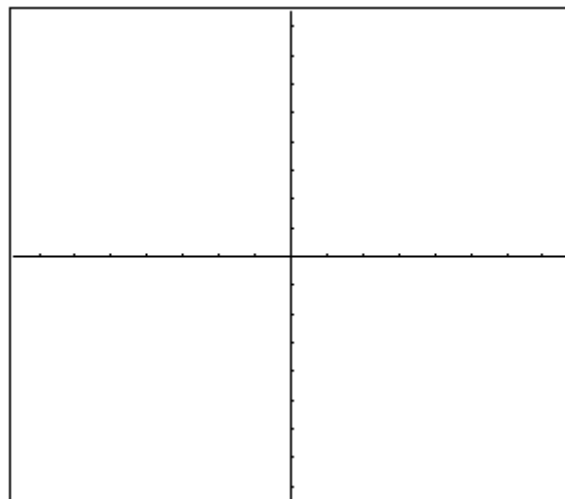
Complete:

Vertex Point: \_\_\_\_\_

Axis of Symmetry: \_\_\_\_\_

x-Intercept/s: \_\_\_\_\_

y-Intercept: \_\_\_\_\_



6. In general, what is the vertex point and axis of symmetry of  $f(x) = a(x-h)^2 + k$  ?

7. A ball is tossed upward. It is known that the ball follows a path over time given by:

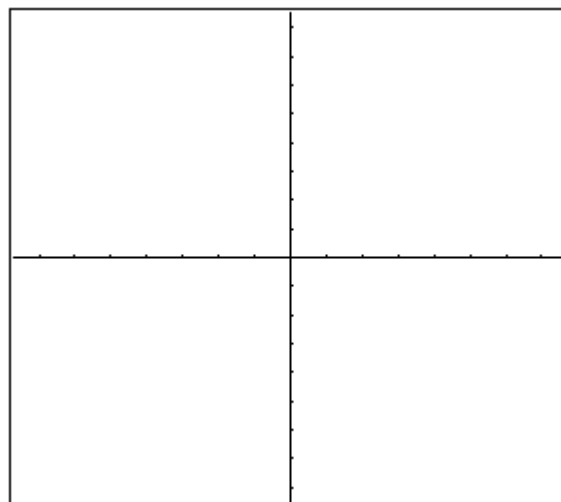
$$f(t) = -3(t-2)^2 + 15$$

Given the  $f(t)$  is the height of the ball at time  $t$ , and  $t$  is greater than or equal to 0 complete:

How high does the ball travel? \_\_\_\_\_

How high was the ball initially? \_\_\_\_\_

When does the ball hit the ground? \_\_\_\_\_



[Note: You will need to use  $x$  instead of  $t$  to graph  $f(t)$  on the ClassPad.]

8. Complete the following table:

| Quadratic equation      | Fill in the blank/s   | Complete the square |
|-------------------------|---|---------------------|
| $f(x) = x^2 - 6x + 1$   | $f(x) = (x^2 - 6x + \underline{\quad}) - \underline{\quad} + 1$ |                     |
| $g(x) = 2x^2 - 12x - 5$ | $g(x) = 2(x^2 - 6x + 9) - \underline{\quad} - 5$                |                     |
| $h(x) = -3x^2 + 6x + 5$ | $h(x) = -3(x^2 - 2x + \underline{\quad}) + 3 + 5$               |                     |