Aim: How do we graph linear and quadratic functions?

I. Do Now:

1. Find the domain:

   (a) $f(x) = \dfrac{1}{\sqrt{3-x}}$

   (b) $g(x) = \dfrac{\sqrt{x+2}}{x-2}$

2. Given $2x + 3y = 6$.

   (a) Solve for y.

   (b) Identify m and b.

   $m = $ _____
   (what does m represent?)
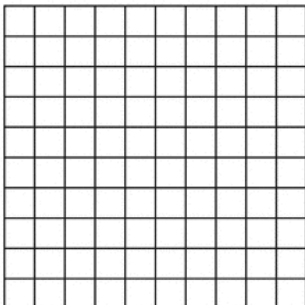
   $b = $ _____
   (what does b represent?)

3. Complete the table of values:

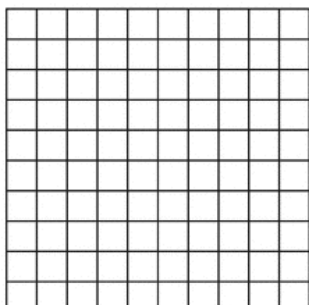| x	0	1	2	3	4
$y = x^2$					

Δy

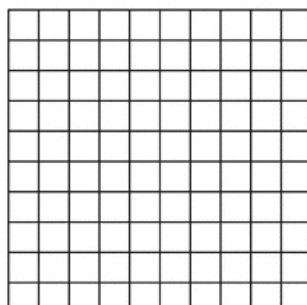**II.** Graphs of Linear Equations. Solve for y, if necessary, then graph each equation.
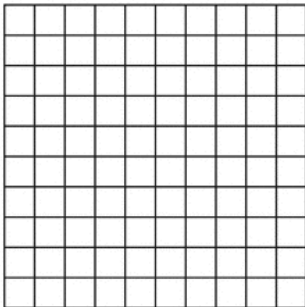
4. $y = \dfrac{1}{2}x$

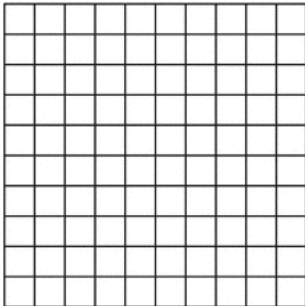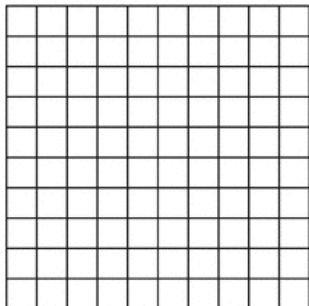5. $y = -2$

6. $x = -1$

7. $x - 2y = 8$

III. Graphing Parabolas $y = ax^2 + bx + c$ [$1a, 3a, 5a$ method]

Procedure:

1. Find axis of symmetry $x = \dfrac{-b}{2a}$ (x-coordinate of vertex)

2. Find y-coordinate by substituting the value found in step 1 into the equation.

3. Find $1a, \ 3a, \ 5a, \ldots$ and use these values to plot more points.

4. Connect points to form parabola and use $(0, c)$ as a check point.
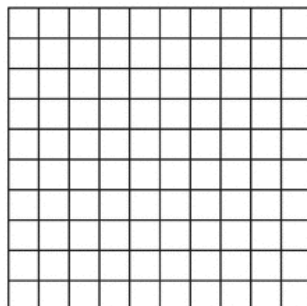
8. $y = x^2 - 4x + 3$

9. $y = 2x^2 + 8x + 8$

10. $y = -3x^2 + 3x + 6$

HW13 (use graph paper)

Find the domain: (a) $f(x) = \dfrac{10}{x^2 - 2x}$ (b) $f(x) = \dfrac{1}{\sqrt{x^3 - x^2}}$

Sketch the graph: (c) $y = -x^2 + 2x + 3$ (d) $y - 2x - 3 = 0$

(e) $x - 5 = 0$ (f) $y + 2x^2 = 0$

(g) $y = x^2 - 4x$