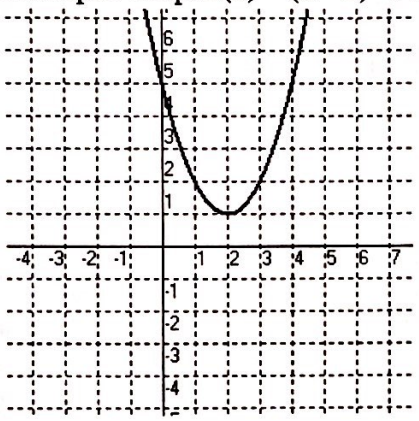
Graphing Parabolas in Vertex Form

Remember, when we're graphing a parabola, we want to find the vertex first, and then find two other points on either side of the vertex to graph so that we get the curved shape we're all familiar with. When a quadratic equation is in vertex form, the vertex is much easier to find than if the quadratic equation is in standard form.

- Example: Graph $f(x) = (x - 2)^2 + 1$

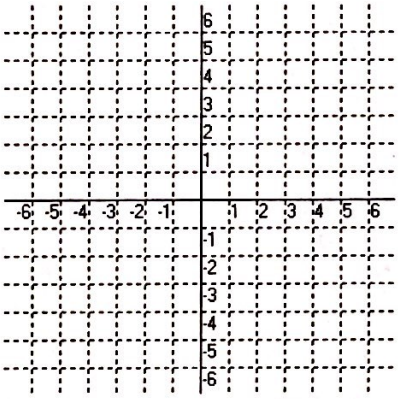


The vertex is (2, 1). Since the x-value for the vertex is "2", then for the other x-values, we'll pick 3 and 4 on the left and 0 and 1 on the right. (The two nearest, nice x-values to x = 2).
Then, plug in 0, 1, 3, 4 for "x" and see what we get for f(x).

x	f(x)
0	5
1	2
2	1
3	2
4	5

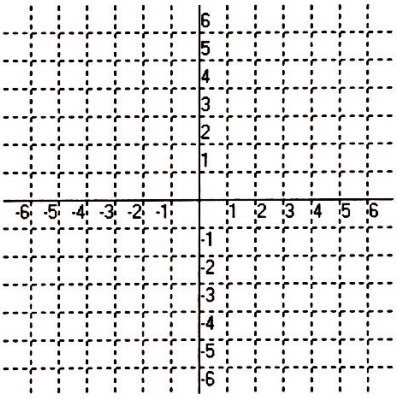
← vertex!

1. Graph $f(x) = (x + 3)^2 - 2$ Vertex = _____



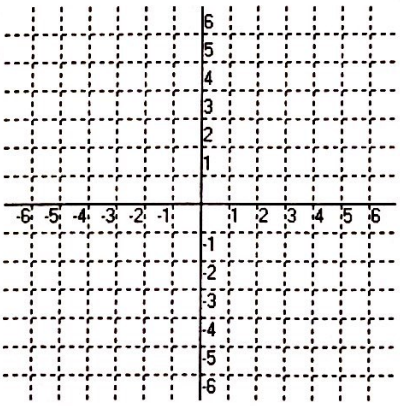
x	f(x)

2. Graph $f(x) = (x + 1)^2 + 4$ Vertex = _____



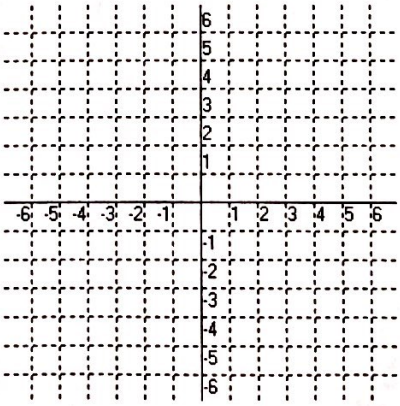
x	f(x)

3. Graph $f(x) = 2(x - 2)^2 - 1$ Vertex = _____



x	f(x)

4. Graph $f(x) = (x - 4)^2 - 5$ Vertex = _____



x	f(x)