

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

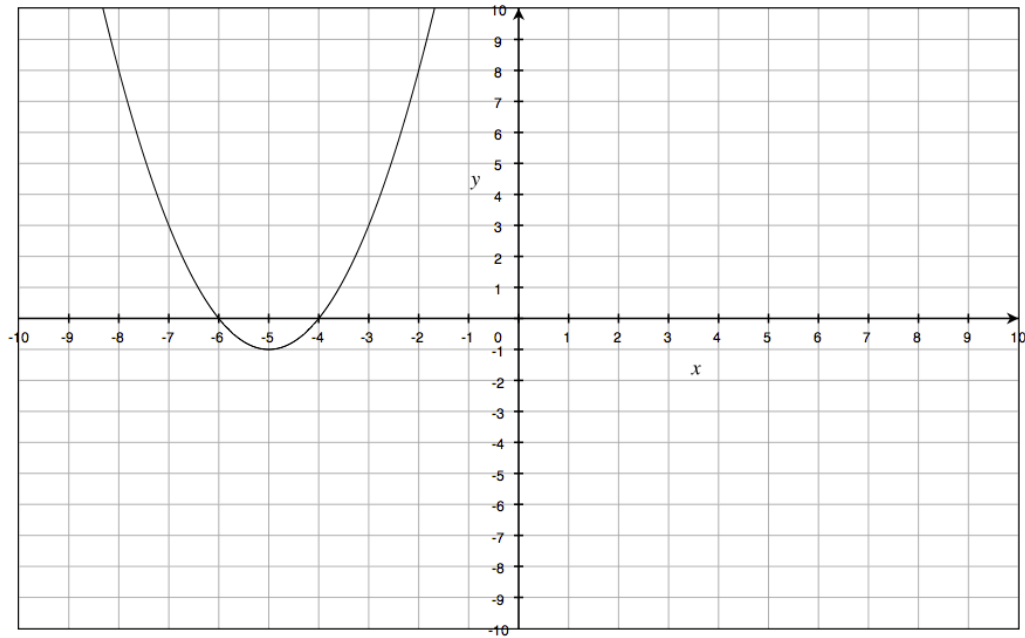
Vertex is $(-5, -1)$

Line of symmetry is $x = -5$

Minimum value of $f(x)$ is -1

$f(-5) = -1$ is a minimum

The graph looks like this:



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

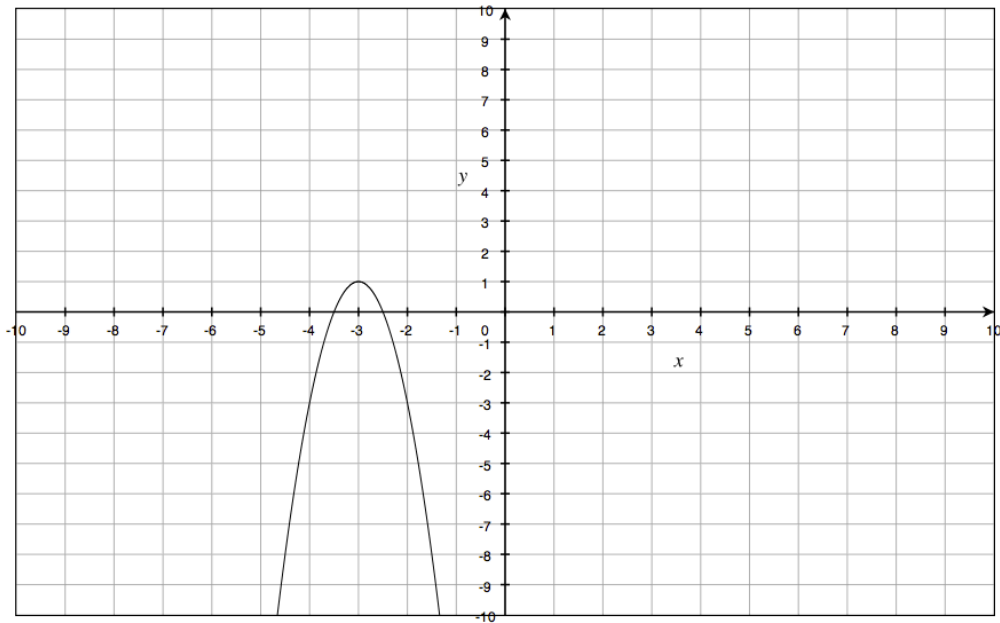
Vertex is $(-3, 1)$

Line of symmetry is $x = -3$

Maximum value of $f(x)$ is 1

$f(-3) = 1$ is a maximum

The graph looks like this:



6. $f(x) = -(x + 7)^2 - 2$

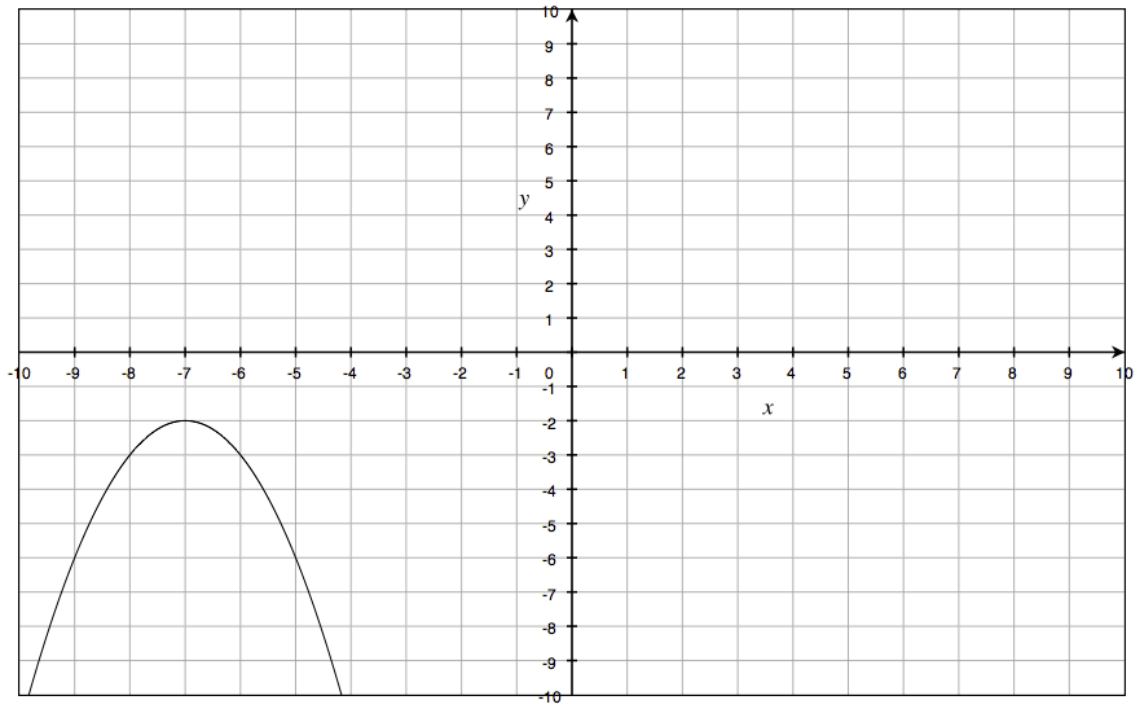
Vertex is $(-7, -2)$

Line of symmetry is $x = -7$

Maximum value of $f(x)$ is -2

$f(-7) = -2$ is a maximum

The graph looks like this:



7. $f(x) = x^2 - 4x - 3$

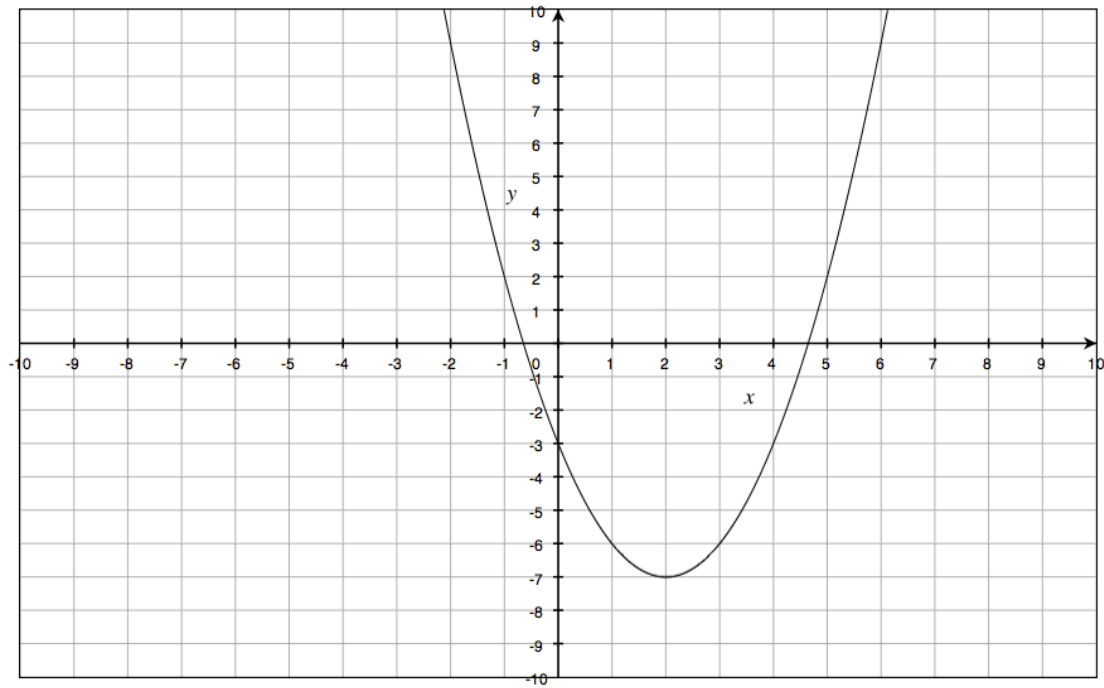
Vertex is $(2, -7)$

Line of symmetry is $x = 2$

Minimum value of $f(x)$ is -7

$f(2) = -7$ is a maximum

The graph looks like this:



8. $f(x) = -x^2 + 8x + 1$

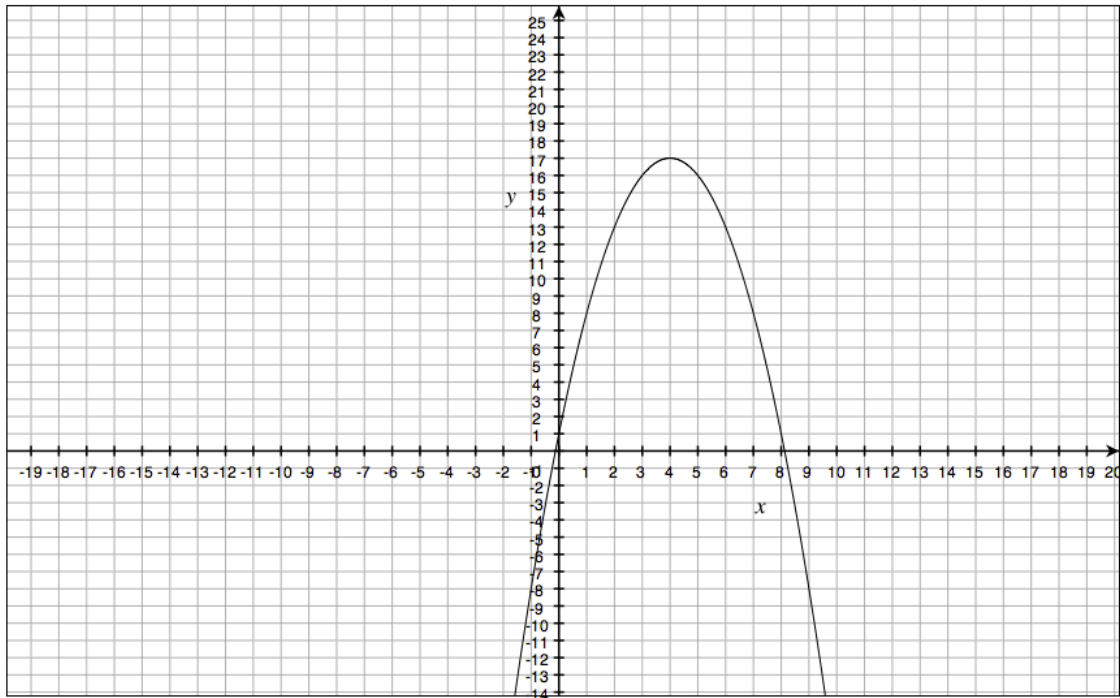
Vertex is (4, 17)

Line of symmetry is $x = 4$

Maximum value of $f(x)$ is 17

$f(4) = 17$ is a maximum

The graph looks like this:



9. $f(x) = 2x^2 - 8x + 15$

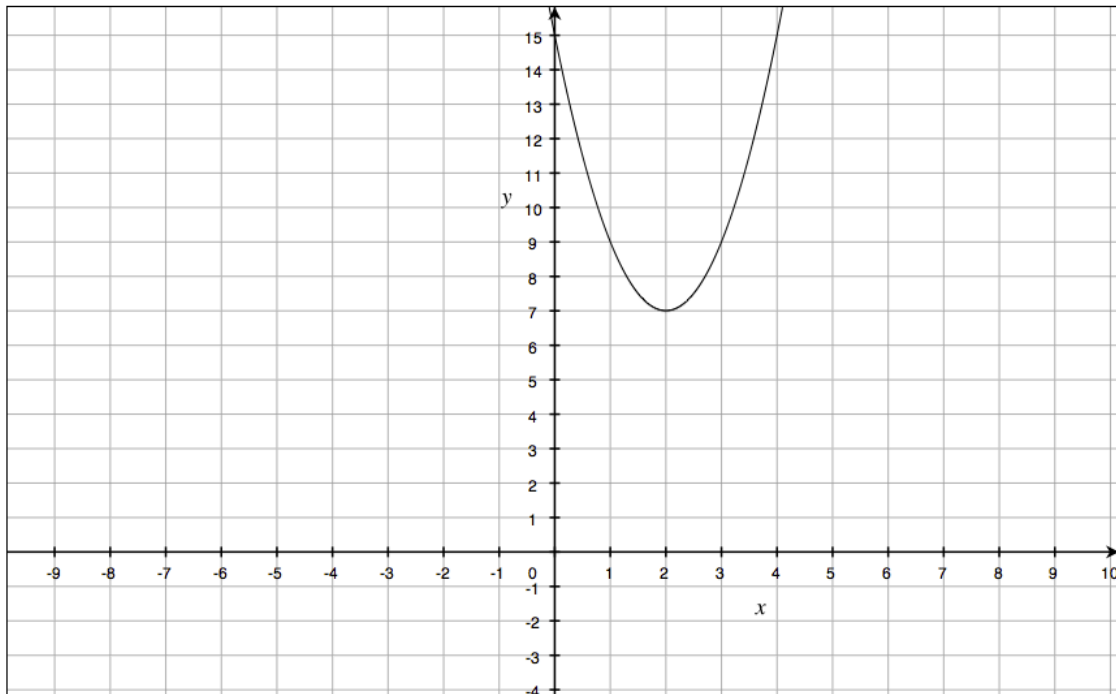
Vertex is $(2, 7)$

Line of symmetry is $x = 2$

Minimum value of $f(x)$ is 7

$f(2) = 7$ is a minimum

The graph looks like this:



10. $f(x) = -2x^2 + 2x + 1$

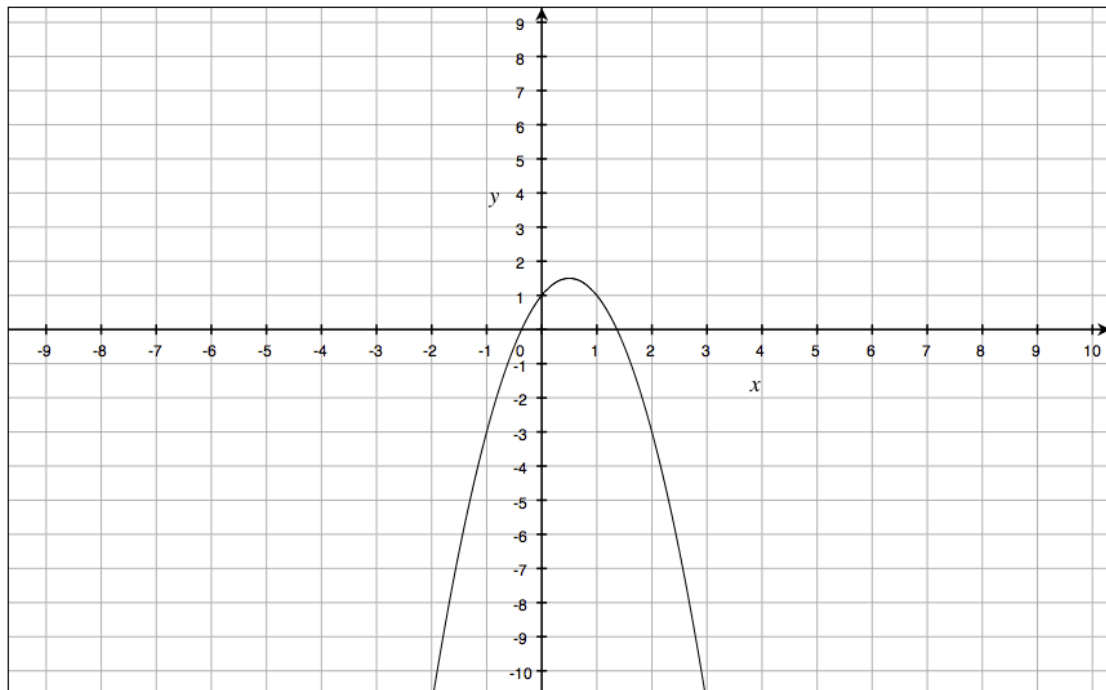
Vertex is $(1/2, 3/2)$

Line of symmetry is $x = 1/2$

Maximum value of $f(x)$ is $3/2$

$f(1/2) = 3/2$ is a maximum

The graph looks like this:



11. $f(x) = 2 - x^2$

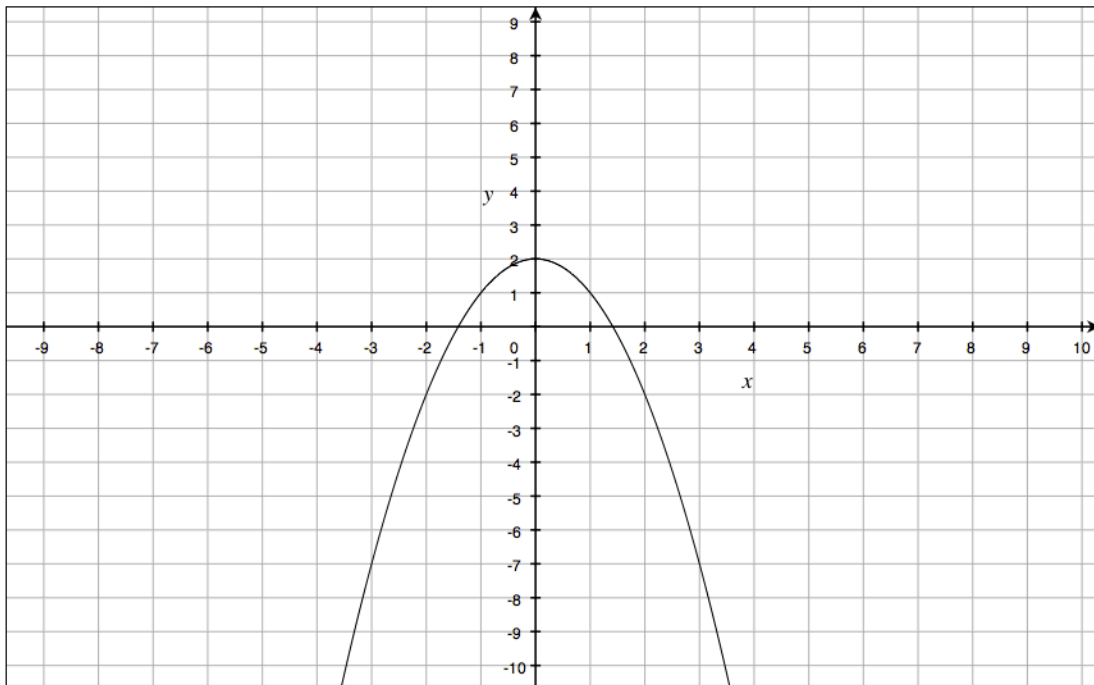
Vertex is $(0, 2)$

Line of symmetry is $x = 0$

Maximum value of $f(x)$ is 2

$f(0) = 2$ is a maximum

The graph looks like this:



12. x-coordinates of the x-intercepts: -3, 10
y-intercept: $(0, 30)$

13. length: 92
width: 92
area: 8464

14. 30

15. B

16. C