Name: Date: Period:

Convert the equations below from standard to vertex form and identify the vertex.

1. $y = x^2 + 6x + 10$

Vertex Form: _____ V: (,)

2. $y = x^2 + 6x + 8$

Vertex Form: _____ V: (,)

3. $y = x^2 + 10x + 25$

Vertex Form: _____ V: (,)

4. $y = x^2 + 10x + 27$

Vertex Form: _____ V: (,)

5. $y = x^2 + 10x + 21$

Vertex Form: _____ V: (,)

6. $y = x^2 + 12x + 34$

Vertex Form: _____ V: (,)

7. $y = x^2 + 14x + 40$

Vertex Form: _____ V: (,)

8. $y = x^2 + 18x + 71$

Vertex Form: _____ V: (,)

9. $y = x^2 - 16x + 71$

Vertex Form: _____ V: (,)

10. $y = x^2 + 18x + 95$

Vertex Form: _____ V: (,)

11. $y = x^2 - 20x + 95$

Vertex Form: _____ V: (,)

12. $y = x^2 + 8x + 7$

Vertex Form: _____ V: (,)

13. $y = 2x^2 + 4x + 5$

Vertex Form: _____ V: (,)

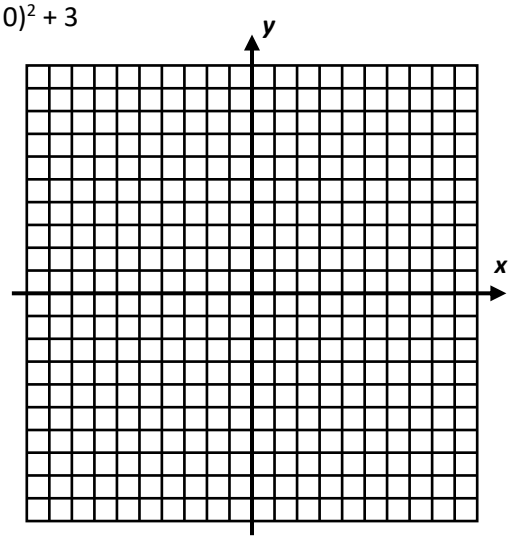
14. $y = 3x^2 + 6x + 8$

Vertex Form: _____ V: (,)

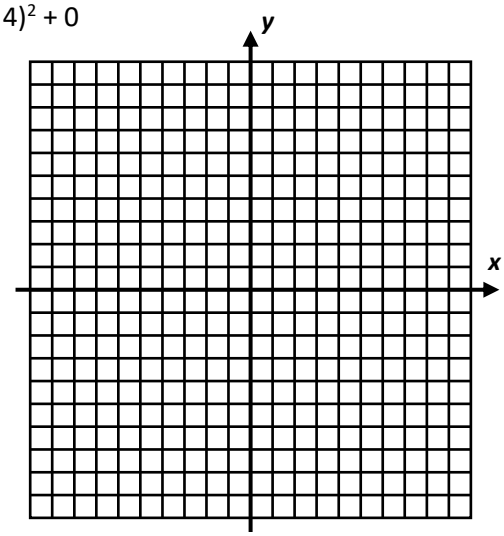
Graph each parabola by following these steps:

- Identify the vertex
- Draw the Axis of Symmetry
- Select 3 x-values on one side of the axis of symmetry and calculate the corresponding y-values. Be sure to show your work.

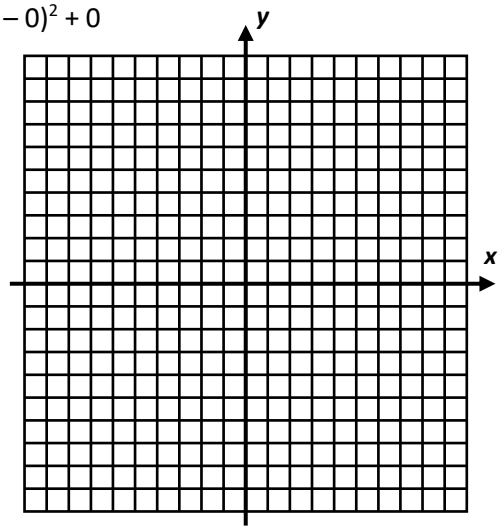
15. $f(x) = (x - 0)^2 + 3$



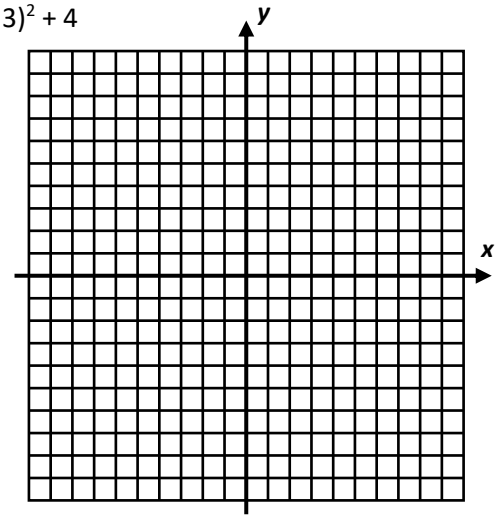
16. $f(x) = (x + 4)^2 + 0$



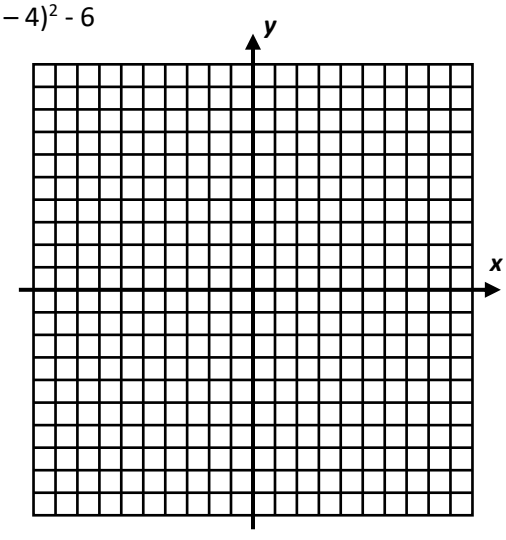
17. $f(x) = -2\,(x - 0)^2 + 0$



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



19. $f(x) = 3\,(x - 4)^2 - 6$



20. $f(x) = \frac{1}{2}\,(x + 2)^2 + 3$