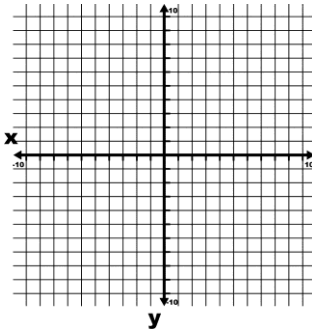


For each problem, find the vertex, tell whether it opens/down or right/left, and graph the equation.

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

Vertex = _____

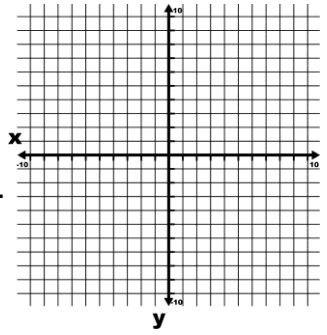
Opens _____



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

Vertex = _____

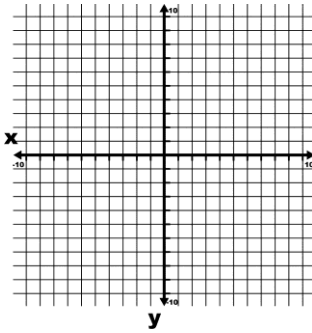
Opens _____



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

Vertex = _____

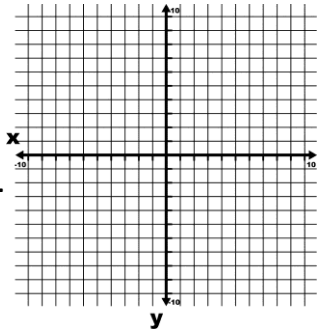
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5. $Y = x^2 - 5$

Vertex = _____

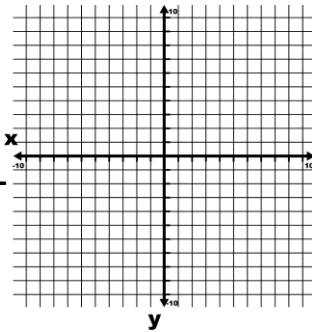
Opens _____



3. $X = 7(y + 4)^2 - 6$

Vertex = _____

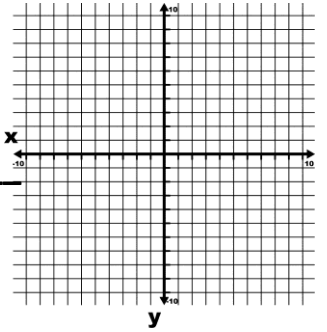
Opens _____



6. $X = -4(y + 2)^2$

Vertex = _____

Opens _____



Determine if each is an equation for a parabola.

7. $Y^2 = 2(x - 5)^2 + 6$

10. $X = -3(y + 1)^2 + 7$

8. $Y = 2x^2 + 3x - 7$

11. $X = 9y^2 - 16$

9. $X^2 = 8y^2 + 10$

12. $\frac{y}{5} = \frac{x^2}{4} + 12$