

Name: _____

Date: _____

Vertex = the turn (max or min). Axis of symmetry is the vertical line $x = h$ through the vertex. Last two are challenge problems!

1. A parabola turns at (3, -4). What is the vertex?

show your work

2. Same parabola: what is the axis of symmetry?

show your work

3. Read the vertex and axis from a graph turning at (-2, 5). (Trainer echo - Jan 2026 Q1 skill!)

show your work

4. Does the vertex of $y = x^2 - 6x + 5$ (opens up) give a max or a min?

show your work

5. Does $y = -x^2 + 2x$ have a max or min?

show your work

6. A parabola has axis of symmetry $x = 4$ and passes through $(2, 7)$. By symmetry, name another point.

show your work

7. The zeros of a parabola are $x = 1$ and $x = 7$. Where is the axis of symmetry?

show your work

8. A parabola turns at $(0, 4)$ opening down. Which is bigger: y at $x = 0$ or at $x = 3$?

show your work

9. Graph $y = -(1/3)x^2 + 4$: state the vertex and axis. (Trainer echo - Aug 2025 Q31!) ★ CHALLENGE

show your work

10. A parabola has vertex $(2, -1)$ and passes through $(5, 8)$. Use symmetry to find the point mirroring $(5, 8)$. ★ CHALLENGE

show your work