

Name: _____

Date: _____

A quadratic has an x^2 term. Its graph is a parabola (a U). $a > 0$ opens up; $a < 0$ opens down. Last two are challenge problems!

1. Is $y = 3x^2 - x + 6$ a quadratic?

show your work

2. Does $y = -2x^2 + 5$ open up or down?

show your work

3. Does $y = x^2 - 4x$ open up or down?

show your work

4. Find y when $x = 3$ for $y = x^2 - 2x + 1$.

show your work

5. Which point lies on $y = 3x^2 - (1/4)x + 3$: $(-2, 15.5)$? (Trainer echo - Aug 2025 Q5!)

show your work

6. Make a table for $y = x^2$ with $x = -2, -1, 0, 1, 2$.

show your work

7. For $y = x^2 - 9$, where does the graph cross the x-axis?

show your work

8. A parabola passes through $(0, 5)$. What is its y-intercept?

show your work

9. For $y = 2x^2 - x + 6$, find y when $x = -6$. (Trainer echo - Jan 2026 Q17 setup!) ★ CHALLENGE

show your work

10. A ball's height is $y = -x^2 + 4$. Is $(2, 0)$ on the graph? What does it mean? ★ CHALLENGE

show your work