

Solving Quadratics Test Review

Solve the following equations by factoring.

1) $x^2 + 3x = -2$

2) $25x^2 - 18x = 12x - 9$

3) $4x^2 - 64 = 0$

Solve the following equations by completing the square.

4) $x^2 + 6x - 5 = 11$

5) $x^2 - 10x + 6 = 0$

Solve the following equations by using the quadratic formula.

6) $x^2 - 5x - 7 = 0$

7) $-x^2 = -10x + 1$

Find the discriminant and use it to determine the number and type of solutions for each equation.

8) $3x^2 - 10x + 1 = 0$

9) $x^2 + 2x + 1 = 0$

10) $4x^2 - 5x + 16 = 0$

Convert from vertex to standard form.

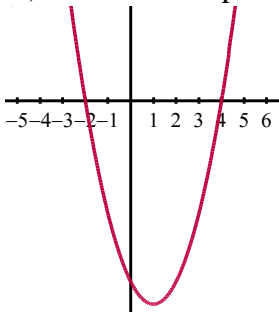
11) $y = (x - 2)^2 + 4$

12) $y = -2(x + 4)^2 + 6$

Write the equation in standard form given the graph or points.

13) Write the simplest equation ($a = 1$)

14) x-intercepts: $x = 3$ and $x = 8$; point: $(2, 1.5)$



Does the following quadratic equation have a double root? Explain in words.

15) $x^2 + 12x + 30 = -6$

Find the vertex of the following quadratic equations.

16) The path of a placekicked football can be modeled by the function $y = -0.026x^2 + 1.196x$ where x is the horizontal distance (in yards) and y is the corresponding height (in yards). What is the football's maximum height? How far away from the place the football is kicked will the maximum height be reached?

17) The path of a basketball thrown at an angle of 45° can be modeled by $y = -0.02t^2 + t + 6$, where t is the time in seconds and y is the height in feet. What time does the basketball reach its maximum height? What is the maximum height of the basketball?