

Ch 2A Review Assignment #25

Name: _____

Given the following information, find the quadratic equation in vertex & standard form.

1. Vertex: (-1,8) and goes through (1,0)
2. Vertex is (-4,-24) and y-intercept is -40
3. Vertex (-12.5,35.5) and goes through (1,400)

Given the following information with quadratic equation in factored form & standard form.

5. x-intercepts at $\left(\frac{1}{4}, 0\right)$ & (-7,0) and passes through (0,7)
6. x-intercepts at (2,0) & (-8,0) and has a y-intercept at 10

Factor the following

7. $2x^2 - 17x + 30$
8. $x^2 - 9x - 112$
9. $5x^2 - 20$
10. $12x^2 - 26x - 56$

Find the roots of the following

11. $3x^2 + 54x + 216 = 0$
12. $2x^2 = x + 28$

Find the x-intercepts

13. $x^2 - 6x - 27 = 0$
14. $12x^2 + 5x = 2$

15. A ball is thrown from the top row of the seats in a stadium. The function $h(t) = -16t^2 + 64t + 80$ gives the height, in feet, of the ball t seconds after it is thrown.

- a. How many seconds will it take the ball to hit the ground?
- b. What was the maximum height of the ball?

Given the following equations find the vertex, axis of symmetry, domain, range and state whether the vertex is a max or min

17. $y = -7(x + 9.5)^2 - 11.2$
18. $y = (x - 11)^2$

Graph the following; make sure to include the vertex, axis of symmetry and symmetry point

19. $y = -16x^2 + 64x + 16$
20. $f(x) = -x^2 - 26x + 19$

21. Solve by factoring: $2x^2 + 2x = 24$

22. John tries to throw a piece of paper into the recycling bin but misses. After 2 seconds the paper reached it's maximum height of 40in. 5 seconds after the paper was thrown it was only at 4 in. Write the equation that models this situation in standard form.

23. You are starting a bakery that mainly sells cakes! You are trying to find out how to make the most profit. The profit equation you come up with is $f(x) = -6x^2 + 504x + 9676$. How many cakes do you need to maximize your profit? What is your maximum profit?