
Get out homework from Wed & Thurs:

- Solving Quadratic Application Problems
- Solving Quadratics by Factoring

Algebra 2 - Clark

Name

Solving Quadratics by Factoring

Date Period



**Solve each equation by factoring.**

1) $a^2 - 36 = 0$

2) $n^2 - 5n - 14 = 0$

Do Problem #4

3) $2v^2 - 3v - 2 = 0$

| | x | −2 |
|---|---|---|
| 2x | $2x^2$ | −4x |
| −1 | −1x | +2 |

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

$-1 \times 4 = -4$, $-1 + 4 = 3$, $-5$

$2x - 1 = 0$, $2x = 1$, $x = \frac{1}{2}$ or $x - 2 = 0$, $x = 2$

$(2x - 1)(x - 2) = 0$

$(2x^2 - 1x)(-4x + 2)$

$x(2x - 1) - 2(2x - 1)$

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

6) $a^2 + 2 = -3a$

7) $k^2 + 4 = 4k$

8) $p^2 - 3 = -2p$

9) $6x^2 - 3 = 7x$

10) $3n^2 - 7n = 6$

11) $3m^2 - 2 = 5m$

12) $6x^2 + 2 = -7x$

13) $9n^2 - 15n - 6 = 0$

14) $4b^2 = 6 - 10b$





**Algebra 2**
**Solving Quadratic Application Problems**

Name: _____
Date: _____ Period: _____

**SHOW YOUR WORK FOR ALL PROBLEMS.**

1.) Imagine you have a large, ground based catapult, and no feelings for the well-being of animals. You take a cow, put it in the catapult, and let Betsy fly. Betsy will follow a parabolic path! Let's say her height above the earth is modeled by this function:

$h(t) = -16t^2 + 224t$, where h(t) is measured in feet, and t is measured in seconds.

Now, just because you have a strong disdain for animals, that doesn't mean you aren't curious about parabolas; let's ask some questions.

a) When will Betsy reach her highest point, or her maximum height? _____
*Hint: Use your axis of symmetry formula*

b) What will Betsy's maximum height be? _____
*Hint: Use your answer from part (a) and plug it into h(t).*

c) When will Betsy's height above the ground be **exactly 384 feet**?
*Hint: Set your function equal to 384, then solve by factoring. You should find two answers.*

_____ and _____

d) Are both of your answers from part (c) reasonable? Explain.

_____

2.) Now that we have an idea of what catapults, I mean parabolas, are good for, let's mix it up a bit. Imagine one of your great ancestors, let's call him Bob, riding on a flying dragon in a great prehistoric battle. Bob's enemies have a cannon, perched atop a 448 foot tower, that can shoot a pretty mean, parabolic-path following ball of dragon killing iron. Suppose the height of the cannon ball is modeled by

$h(t) = -16t^2 + 192t + 448$, where h(t) is measured in feet and t is measured in seconds.

a) When will the cannon ball reach its highest point? _____

b) What is the cannon ball's maximum height? _____

c) When will the cannon ball **land on the ground**?
*Hint: Set your function equal to 0, then solve by factoring. You should find two answers.*

_____ and _____

d) Are both of your answers from part (c) reasonable? Explain.

_____


If you haven't turned in homework from week, please turn in:

- Blue Graphing WS
- Graphing - Factored Form WS