Unit 8: Quadratics

Lesson 5: Using all 4 methods..

Objectives:

* I can solve quadratic equations by taking the square root
* I can change the standard form to vertex form
* I can solve a quadratics by completing the square

Agenda:

* Video
* practice
* Applied problem

Focus Questions:

* How can solve quadratic equations by taking the square root?
* How can we change the standard form of a quadratic to the vertex form?
* How can I solve a quadratic by completing the square?

Vocabulary:

Perfect Square, standard form, Vertex form, completing the square

Homework: HW 8-5

Web Support:

<https://www.youtube.com/watch?v=8kvb6YVHtYc>

 **Do Now**

1. Find the x –intercepts of this quadratic equation by factoring, graphically and by using the quadratic formula. $ x^{2}+5x-24=0$

|  |  |
| --- | --- |
| **Graphically: List the steps:**  | **Factoring ( 0 product property)****Meaning you must factor first:**  |
|  |  |
| **Quadratic formula:**  | **Solce by completing the squre and state the values of the vertex.**See the source image |

**Mixed PRACTICE:**



$1) 4x^{2}-5=2 $ 2. $(x+3)^{2}=13$ 3. $4(x+10)^{2}=24$

**Solve the following quadratics by completing the square:**

 4. $x^{2}+2x-8=0$ 5. $x^{2}+4x+2=0$

**Solve the following quadratics by using the quadratic formula:**

6. $0=x^{2 }-12x-36$ 7. $14=x^{2 }+4x$

**Solve the following quadratics by using the 0 product property:**

8 $x^{2}-4x-60=0$

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_: Homework 8-5**

Solve the following quadratics by **taking the square root:**

1. $6x^{2}-21=33$ 2. $5-2x^{2}=-3$

$ 3. (x+15)^{2}=81$ 4. $(x-12)^{2}=54$

**Solve using the quadratic formula:** 

**5.** $ x^{2}+12x+27=0$ 6. $x^{2}+4x-10=2$

7.A player kicks a soccer ball with upward. The quadratic function $ h = -2t^{2}+ 16t +2$ represents the height of the ball h in feet after t seconds.

1. Make a sketch of the graph using an appropriate window.
2. What is the maximum height?