

**Homework** 1.10 Solving Quadratics Part 2

Answer the following questions about solving quadratics.

1. What are the solving methods to solve for quadratic equations? Fill in the methods in the diagram below.

<u>2 Terms (Binomials)</u>	<u>3 Terms (Trinomials)</u>
1. _____	1. _____
2. _____	2. _____
3. _____	

2. In order to solve for x by using the taking square root method, you must \_\_\_\_\_.

Find the solutions of the quadratics.

3.  $x^2 + 4 = 0$

2.  $(x + 3)^2 + 6 = 18$

3.  $(2x + 6)^2 - 8 = 24$

4.  $x^2 + 21 = 5$

5.  $3(x + 4)^2 = -9$

6.  $2x^2 + 338 = 0$

7.  $4(x + 5)^2 = -64$

8.  $2x^2 + 338 = 0$

9.  $-9x^2 = 243$

10. The tallest building in the USA is in Chicago, Illinois. It is 1450 ft. tall. The equation of rise and fall is represented by  $y = -16t^2 + 1450$ . How long would it take a penny to drop from the top of the building to the ground?

Answer the following questions about solving quadratics.

1. What are the solving methods to solve for quadratic equations? Fill in the methods in the diagram below.

2 Terms (Binomials)	3 Terms (Trinomials)
1. <u>GCF Factoring</u>	1. <u>GCF Factoring</u>
2. <u>Difference of Squares</u>	2. <u>Factoring Trinomials</u>
3. <u>Taking the Square Root</u>	

2. In order to solve for x by using the taking square root method, you must isolate the quadratic term.

Find the solutions of the quadratics.

3.  $x^2 + 4 = 0$

$$x = 2i, x = -2i$$

2.  $(x + 3)^2 + 6 = 18$

$$x = -3 + 2\sqrt{3},$$

$$x = -3 - 2\sqrt{3}$$

3.  $(2x + 6)^2 - 8 = 24$

$$x = -3 + 2\sqrt{2},$$

$$x = -3 - 2\sqrt{2}$$

4.  $x^2 + 21 = 5$

$$x = 4i, x = -4i$$

5.  $3(x + 4)^2 = -9$

$$x = -4 + i\sqrt{3},$$

$$x = -4 - i\sqrt{3}$$

6.  $2x^2 + 338 = 0$

$$x = 13i,$$

$$x = -13i$$

7.  $4(x + 5)^2 = -64$

$$x = -5 + 4i,$$

$$x = -5 - 4i$$

8.  $2x^2 + 338 = 0$

$$x = 13i,$$

$$x = -13i$$

9.  $-9x^2 = 243$

$$x = 3i\sqrt{3},$$

$$x = -3i\sqrt{3}$$

10. The tallest building in the USA is in Chicago, Illinois. It is 1450 ft. tall. The equation of rise and fall is represented by  $y = -16t^2 + 1450$ . How long would it take a penny to drop from the top of the building to the ground?  $t \approx 9.52$  seconds