

## Quadratic Equations Test Review

Date \_\_\_\_\_ Period \_\_\_\_\_

**Solve each equation by factoring.**

1)  $x^2 + x - 30 = 0$

2)  $a^2 + 8a + 7 = 0$

3)  $p^2 + 4p + 3 = 0$

4)  $x^2 + 10x + 25 = 0$

5)  $14x^2 + 15x - 9 = 0$

6)  $7r^2 + 6r - 16 = 0$

7)  $2b^2 - b = 0$

8)  $7n^2 + 53n + 28 = 0$

**Solve each equation with the quadratic formula.**

9)  $5a^2 - 4a - 19 = 0$

10)  $5n^2 + 3n - 36 = 0$

11)  $4x^2 + 4x + 1 = 0$

12)  $5x^2 - 10x + 12 = 0$

**Solve each equation by completing the square.**

13)  $k^2 - 16k + 55 = 0$

14)  $2n^2 - 12n - 80 = 0$

15)  $6n^2 + 12n - 92 = 0$

16)  $p^2 - 18p + 21 = 0$

**Find the discriminant of each quadratic equation then state the number and type of solutions.**

17)  $2n^2 + 2n + 2 = 0$

18)  $-b^2 - 4b - 4 = 0$

19)  $-v^2 + v + 2 = 0$

20)  $-5m^2 + 3m - 1 = 0$

21) Fourty-two less than the square of a negative integer is the same as the integer. Find the integer.

22) Find two consecutive odd integers usch that the square of the first, added to 3 times the second, is 24.

23) The length of a photograph is 1 cm. less than twice the width. The area is 45 square cm. Find the dimensions of the photograph.

24) A square field had 5 meters added to its length, and 2 meters added to its width. The field then had an area of 130 square meters. Find the length of a side of the original field.

**A projectile is shot from a platform. It's height  $h$  in feet, can be calculated with the equation  $h = -3t^2 + 6t + 45$  where  $t$  represents time in seconds after it was shot.**

25) How high was the platform the projectile was shot from?

26) How long will it take to hit the ground?

27) How high will the projectile be after 3 seconds?

28) When will it reach its heighest point?

29) What is the heighest that the projectile will get?

30) When will it be 21 feet from the ground?

## Quadratic Equations Test Review

Date \_\_\_\_\_ Period \_\_\_\_\_

**Solve each equation by factoring.**

1)  $x^2 + x - 30 = 0$

$\{5, -6\}$

2)  $a^2 + 8a + 7 = 0$

$\{-7, -1\}$

3)  $p^2 + 4p + 3 = 0$

$\{-3, -1\}$

4)  $x^2 + 10x + 25 = 0$

$\{-5\}$

5)  $14x^2 + 15x - 9 = 0$

$\left\{-\frac{3}{2}, \frac{3}{7}\right\}$

6)  $7r^2 + 6r - 16 = 0$

$\left\{\frac{8}{7}, -2\right\}$

7)  $2b^2 - b = 0$

$\left\{\frac{1}{2}, 0\right\}$

8)  $7n^2 + 53n + 28 = 0$

$\left\{-\frac{4}{7}, -7\right\}$

**Solve each equation with the quadratic formula.**

9)  $5a^2 - 4a - 19 = 0$

$\left\{\frac{2 + 3\sqrt{11}}{5}, \frac{2 - 3\sqrt{11}}{5}\right\}$

10)  $5n^2 + 3n - 36 = 0$

$\left\{\frac{12}{5}, -3\right\}$

11)  $4x^2 + 4x + 1 = 0$

$\left\{-\frac{1}{2}\right\}$

12)  $5x^2 - 10x + 12 = 0$

$\left\{\frac{5 + i\sqrt{35}}{5}, \frac{5 - i\sqrt{35}}{5}\right\}$

**Solve each equation by completing the square.**

13)  $k^2 - 16k + 55 = 0$

$\{11, 5\}$

14)  $2n^2 - 12n - 80 = 0$

$\{10, -4\}$

15)  $6n^2 + 12n - 92 = 0$

$\left\{\frac{-3 + 7\sqrt{3}}{3}, \frac{-3 - 7\sqrt{3}}{3}\right\}$

16)  $p^2 - 18p + 21 = 0$

$\{9 + 2\sqrt{15}, 9 - 2\sqrt{15}\}$

**Find the discriminant of each quadratic equation then state the number and type of solutions.**

17)  $2n^2 + 2n + 2 = 0$

-12; two imaginary solutions

18)  $-b^2 - 4b - 4 = 0$

0; one real solution

19)  $-v^2 + v + 2 = 0$

9; two real solutions

20)  $-5m^2 + 3m - 1 = 0$

-11; two imaginary solutions

21) Fourty-two less than the square of a negative integer is the same as the integer. Find the integer.

$$x^2 - 42 = x$$
$$x = -6$$

22) Find two consecutive odd integers usch that the square of the first, added to 3 times the second, is 24.

$$x^2 + 3(x + 2) = 24$$
$$x = \{-6, 3\} \text{ but only 3 is odd, so 3 and 5.}$$

23) The length of a photograph is 1 cm. less than twice the width. The area is 45 square cm. Find the dimensions of the photograph.

$$w(2w - 1) = 45$$

5 cm. by 9 cm.

24) A square field had 5 meters added to its length, and 2 meters added to its width. The field then had an area of 130 square meters. Find the length of a side of the original field.

$$(x + 5)(x + 2) = 130$$
$$x = 8 \text{ meters}$$

**A projectile is shot from a platform. It's height  $h$  in feet, can be calculated with the equation  $h = -3t^2 + 6t + 45$  where  $t$  represents time in seconds after it was shot.**

25) How high was the platform the projectile was shot from?

45 feet

26) How long will it take to hit the ground?

5 seconds

27) How high will the projectile be after 3 seconds?

36 feet

28) When will it reach its heighest point?

1 second

29) What is the heighest that the projectile will get?

48 feet

30) When will it be 21 feet from the ground?

\*Problem should say 21 FEET not INCHES!!  
4 seconds