

# C11 - 4.0 - Quadratics Functions/Equations Review

1) Graph with a table of values

$$y = x^2 - 2x - 3$$

2) Solve/Find x-intercepts

a)  $y = x^2 + 6x + 8$

b)  $y = -x^2 - 5x$

c)  $y = 2x^2 - 3x - 2$

d)  $y = 9x^2 - 4$

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

f)  $x^2 + 1 = 0$

g)  $2(x - 1)(x - 7) = -(x - 4)^2 - 6$

h)  $y = x^2 - 4x - 3^*$

3) Find the Quadratic Function in factored and standard form with no fractions.

a)  $x - int = 2$  and 6

b)  $x - int = 2$  and  $-2, a = 2$

c)  $x - int = \frac{3}{2}$  and  $-\frac{7}{2}$

d)  $x - int = -3$

e\*) Point  $(-4, 6)$ ,  $x - int's = -3, -1$

4) Solve/Find x-int by using the square root method. ( $y=0$  if x-int.)

a)  $y = x^2 - 9$

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

c)  $-x^2 = -4x + 3$

d)  $x^2 + 4 = 0$

e)  $2(x + 3)^2 = 5$

f)  $3(x + 1)^2 - 12 = 0$

g)  $-(x - 2)^2 + 8 = 0$

h)  $3\left(x + \frac{1}{2}\right)^2 - 9 = 0$

5) Solve by using quadratic equation

a)  $x^2 - 2x = 3$

b)  $2x^2 = -7x + 3$

c)  $x^2 + 3x + 7 = 0$

d)  $4x^2 - 12x - 14 = 0$

6) Find the Quadratic Function  $y =$   
(Show Algebra):

a)  $x - int = \pm\sqrt{5}$

b)  $x - int = 2 \pm \sqrt{3}$

c)  $x - int = \frac{3 \pm \sqrt{2}}{2}$

7) Find the number of roots/X-intercepts/solutions/zeros.

a)  $y = x^2 - 4x + 3$

b)  $y = x^2 + 5x + 7$

c)  $y = x^2 + 6x + 9$

8) Solve for K to have one solution, two solutions, and zero solutions.

a)  $x^2 + 10x + k = 0$

1) Table of Values

2) Solve by factoring

3) Find Equation

4) Square Root Method

5) Quadratic Formula

6) Find Equation

7) Discriminant

8) Solve for K

9) Link 3-4

10-15) Word Problems

# C11 - 4.0 - Quadratics Words Problems Review

## Solving

### 9) Numbers

- Find a number when subtracting that number from half its square is 4.
- Find two consecutive integers whose product is 156.
- The product of two consecutive odd integers is 35. Find the numbers.
- The difference of squares of two consecutive odd numbers is  $-24$ . Find the numbers.

## Geometry

### 10) Find the dimensions of a rectangular:

- Prism with a width is 2m more than its length with a height of 8 meters and a volume of  $280 m^3$ .
- Garden with an Area of  $56 m^2$  and a Perimeter of 30m.
- Fence split in half is against a wall with the partition perpendicular to the wall with 39m of fencing and an area of  $66 m^2$ .
- A poster has dimensions 5 centimeters by 7 centimeters. The frame width of the frame is equal around the poster and increases the total area by  $28 cm^2$ . Find the width of the frame.

- Find the dimensions of a right triangle with one leg 1 centimeter longer than the other and a hypotenuse two centimeters longer than the smaller leg.

### 12) MaxMin/Solving/Systems/Inequalities

- The height vs distance of a bow and arrow shot off a cliff on an angle is represented by the following equation:

$$h = -2d^2 + 8d + 10$$

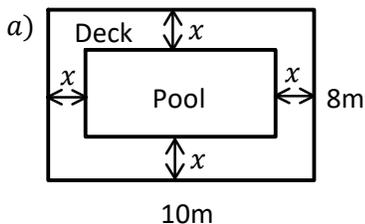
How far did the arrow go before it hit the ground? At what distance is the height 16 m?

- The height vs time of a Rocket shot straight up off a removable mount with velocity  $50 \frac{m}{s}$  is represented by the

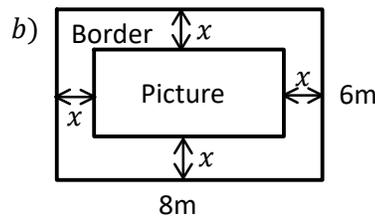
$$h = -4.9t^2 + 50t + 1$$

How far did the Rocket go before it hit the ground? At what time is the height 100 m?

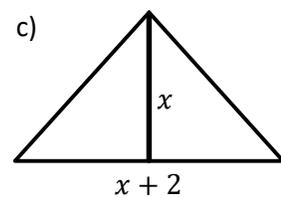
- Solve for  $x$ .



A pool area of  $48 m^2$  is surrounded by a deck of equal width. Find the width of the deck and the dimensions of the pool.

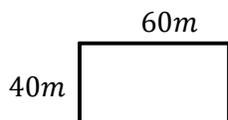


A picture is 75% of the total area with the surrounding frame of equal width.



$$A = 40 m^2$$

- Double the area by extending dimensions by same amount.



- Find Volume if  $SA = 400\pi$

