3.8 Quadratic Application Word Problems Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Math 2

Things to remember when completing quadratic application word problems:

**t** is**\_\_\_\_\_\_**. It represents **\_\_**. **h** or d is **\_\_\_\_\_\_\_\_\_**/distance. It represents **\_\_**.

When an object hits the **ground** (water), its height **= 0**.

1. After *t* seconds, a ball tossed in the air from the ground level reaches a height of *h* feet given by the equation **h = 144t – 16t2**.

a. What is the height of the ball after 3 second?

b. What is the maximum height the ball will reach?

c. Find the number of seconds the ball is in the air when it reaches a height of 224 feet.

d. After how many seconds will the ball hit the ground before rebound?

1. A rocket carrying fireworks is launched from a hill 80 feet above a lake. The rocket will fall into lake after exploding at its maximum height. The rocket’s height above the surface of the lake is given by

**h = -16t2 + 64t + 80**.

a. What is the height of the rocket after 1.5 second?

b. What is the maximum height reached by the rocket?

c. How long will it take for the rocket to hit 128 feet?

d. After how many seconds after it is launched will the rocket hit the lake?

1. A rock is thrown from the top of a tall building. The distance, in feet, between the rock and the ground t seconds after it is thrown is given by **d = -16t2 – 4t + 382.**  How long after the rock is thrown is it 370 feet from the ground?
2. A farmer decides to enclose a rectangular garden, using the side of a barn as one side of the rectangle. What is the max area that the farmer can enclose with 80ft of fence? What should the dimensions be to the given area?
3. The max area that the farmer can enclose with 80ft of fence \_\_\_\_\_\_\_\_\_\_ sq. ft.
4. The dimensions of the garden to give this area is \_\_\_\_\_\_\_\_\_\_\_ ft by \_\_\_\_\_\_\_\_\_\_\_ ft.
5. A farmer has 230 ft of fence to enclose a rectangular garden, using a river as one side of the rectangle. What is the largest garden area that can be enclosed with the 230 ft of fence?
6. The max area that the farmer can enclose with 80ft of fence \_\_\_\_\_\_\_\_\_\_ sq. ft.
7. The dimensions of the garden to give this area is \_\_\_\_\_\_\_\_\_\_\_ ft by \_\_\_\_\_\_\_\_\_\_\_ ft.

**EOC Questions:**



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