Projectile Motion

Quadratic Word Problems

Maximizing Area

Quadratic Word Problems

We are standing on the top of a 1680 ft tall building and throw a small object upwards with an initial velocity of 256 feet per second. At every second, we measure the distance of the object from the ground.

1. Write an equation to represent this situation.
2. Find h(3). This represents the object’s position 3 seconds after we threw it.
3. How much does the object travel during the two seconds between 5 seconds and 7 seconds?
4. How long does it take for the object to reach a height of 2640 ft?
5. How long does it take for the object to hit the ground?

Adam is on spring break in Acapulco and decides to go cliff jumping into the ocean. He jumps off a 58.8 meter tall cliff and is launched at 19.6 meters per second.

1. Write an equation to represent this situation.
2. Find h(2). This represents the Adam’s position 3 seconds after he jumped.
3. How far does Adam travel during the two seconds between 4 seconds and 6 seconds?
4. How long does it take for the object to reach a height 64 meters?
5. How long does it take for Adam to hit the ground?

*A farmer decides to enclose a rectangular garden, using the side of a barn as one side of the rectangle. What is the maximum area that the farmer can enclose with 60 ft of fence? What should the dimensions of the garden be to give this area?*

*A farmer wants to put a fence around a vegetable garden. Only three sides must be fenced, since a rock wall will form the fourth side. If he uses 40m of fencing what is the maximum area possible?*

*Ms. Russell wants to build an enclosed outdoor play area so her kitties can safely go outside. If she has 32 yards of fencing and plans on using the side of the house as one side of her enclosure, what is the maximum area Ms. Russell can create so her kitties have the most space to play?*