Unit 8 Discussion Example – Post 2: Reply to a Classmate

Hi Classmate! Your equation was $y = -16t^2 + 75t + 20$.

a) Find the height, y, when $t = 1$ second.

$y = -16t^2 + 75t + 20$

$y = -16(1)^2 + 75(1) + 20$

$y = -16 + 75 + 20$

$y = 79$ feet

After 1 second, the human cannonball will be 79 feet off the ground.

Find the height, y, when $t = 5$ seconds.

$y = -16t^2 + 75t + 20$

$y = -16(5)^2 + 75(5) + 20$

$y = -400 + 375 + 20$

$y = -5$ feet

After 5 seconds, the human cannonball will be -5 feet off the ground or -5 feet underground.

Find the height, y, when $t = 10$ seconds.

$y = -16t^2 + 75t + 20$

$y = -16(10)^2 + 75(10) + 20$

$y = -1600 + 750 + 20$

$y = -830$ feet

After 10 seconds, the human cannonball will be -830 feet off the ground or 830 ft underground!

b) This all makes because the human cannonball is flying through the air between -0.25 seconds and 4.94 seconds. The human cannonball has already hit the ground before 5 and 10 seconds so the calculation showed them underground…