

Name: _____

Date: _____

Hour: _____

Projectile Motion HW-2

Directions: Use a separate sheet of paper to show your work and put your answers on this sheet.

1.) An object is launched directly upward at 63 feet per second from a platform 80 feet high. Write the function for the height of this object at any given time (t seconds).

- a. Write the equation for the scenario
- b. When will the object reach its maximum height?
- c. What will that maximum height be?

2.) A baseball is thrown straight up into the air with an initial velocity of 29 feet per second from a point exactly 6 feet off the ground.

- a. Write the function for the height of this object at any time
- b. When will this object return and hit the ground?

3.) A diver is standing on a platform 24 feet above the pool. He jumps from the platform with an initial upward velocity of 8 feet per second.

- a. How long will it take for the diver to hit the water?
- b. How long will it take the diver to reach his peak height?
- c. What is his maximum height?

4.) A juggler tosses a ball into the air. The ball leaves the juggler's hand 5 feet above the ground and has an initial velocity of 31 feet per second.

- a. How long will it take for the ball to hit the ground?
- b. How long will it take the ball to reach its peak height?
- c. What is its maximum height?

5.) Pat is in his tree house playing with fireworks. He lights off a Roman candle, which shoots straight up into the air at an initial velocity of 288 feet per second. The tree house is 100 feet in the air.

- a. When will the Roman candle hit the ground?
- b. How long will it take the Roman candle to reach its peak height?
- c. What is its maximum height?

6.) A dud missile is fired straight into the air from a nuclear silo in Kansas. The height of the opening of the silo is 100 feet straight up, and the missile comes out of it at an initial velocity of 400 feet per second.

- a. How long will it take for the dud to hit the ground?
- b. How long will it take the missile to reach its peak height?
- c. What is its maximum height?