Free Fall Problem Set

Name: _____

1. A ball is dropped off a 20.5 meter rooftop. What will the velocity of the ball be just before it hits the ground?

2. A sky diver jumps out of an airplane and falls for 6.5 seconds before pulling his parachute. How far has he fallen in that time?

3. A physics student throws his book off of a rooftop. If the book fell a total distance of 3.1 meters and it took .45 seconds for it to hit the ground, what was the speed of the book when it left the student's hand?

4. A ball is thrown straight up in the air. If it is in the air for 3.2 seconds, how high did the ball reach?

5. A student attending an eagles football game drops their wallet off of the bleachers. If the bleacher were 20 feet off of the ground, how long did it take for the wallet to hit the ground?

6. A woman is cliff diving and drops into the water. If she takes .4 seconds to hit the water, how high was the cliff?

7. Another woman jumps off a different cliff. If her final velocity before hitting the water is 43 m/s, how high was her cliff?

8. A penny is dropped off of the Sear's Tower Skydeck which is 1,320 feet off of the ground. Neglecting wind resistance, how fast will the penny be moving just before it hits the ground?