

Name _____

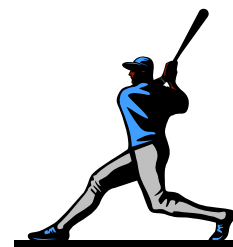
Physics

Vertical Kinematics practice problems

Directions: Answer the following questions using the rubric below as a guide.

Writing a correct equation for the problem	1 point
Plug numbers into equation	1 point
Units on <i>ALL</i> numbers	1 point
Solving for Correct Final Answer	2 point
Total point per problem	5 points total

1. A baseball is popped straight up into the air and has a hang-time of 6.25 s. Determine the height to which the ball rises before it reaches its peak. (Hint: the time to rise to the peak is one-half the total hang-time.)



2. The observation deck of a skyscraper is 420 m above the street. Determine the time required for a penny to free-fall from the deck to the street below.



3. A stone is dropped into a deep well and is heard to hit the water 3.41 s after being dropped. Determine the depth of the well.



4. If Kerri Walsh has a vertical leap of 1.1 m, a) what is her take-off speed and b) her hang time (total time to move upwards to the peak and then return to the ground)?



5. With what speed in miles/hr must an object be thrown to reach a height of 91.5 m (equivalent to one football field)? Assume negligible air resistance and $1 \text{ m/s} = 2.23 \text{ mi/hr}$.

6. A ball is thrown 27 meters into the air and returns to the starting position.

(a) How long did it take to reach its apex?

(b) What is the total time in the air?

7. A monkey freefalls for 17.5 seconds.

(a) What was the velocity after this time?

(b) How far did it fall?

