Name: Period:

Free Falling Objects 4

1. A cat jumps up to a shelf and knocks a glass vase off the shelf. You estimate it takes 0.6 seconds to fall and shatter on the floor. How fast was the vase traveling when it hit the floor?

2. The same cat then jumps to a higher shelf and knocks a picture to the floor. The picture takes twice as long to hit the ground as the vase did. What is the speed of the picture when it hit the ground?

3. You drop a rock down a well to see how deep it is (just like they do in the movies.) You hear it go splush 3.5s after you dropped the rock. How deep is the well?

4. A man is forced to jump from the top of a burning building into that round lifesaving net thingy the firemen are holding down below. If the building is 22m high, ignoring air friction, how fast will he be traveling when he lands in the net thingy?

5. When you buy an MP3 player it always comes with a manual that has all sorts of information you usually don’t need. One bit of information it might contain is the maximum impact speed the MP3 player can withstand without damage. If this speed is 5.5 m/s, what is the maximum height you can drop the MP3 player from without damaging it?

6. A ball is thrown upward at a velocity of 25m/s. How high will the ball reach?

7. How much time does it take the ball from question 6 to reach the top?