Kinematics Homework Problems #6

p. 44 #36, 41, 48

Problems taken from the school's old textbook:
Giancoli, D. (1980). *Physics*, 2nd Ed. Englewood Cliffs, NJ: Prentice Hall.

Answers are provided at the bottom of the page.

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36. A diver running 3.6 m/s dives out horizontally from the edge of a vertical cliff and reaches the water below 2.0 s later. How high was the cliff and how far from its base did the diver hit the water?

41. A football is kicked with a speed of 21.0 m/s at an angle of 37^o to the horizontal. How much later does it hit the ground? Ignore air resistance.

48. An athlete executing a long jump leaves the ground at a 30^o angle and travels 8.90 m. What was the takeoff speed?

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Answers:

36. 7.2 m from the base; the cliff was 19.6 m high
41. 2.58 s
48. 10.04 m/s