

Paper Homework No. 04 (Spring 2018)

PHYS 205A: University Physics

Due date: Friday, 2018 Feb 9, 12.00pm, in class

(Name)

(Signature)

Instructions

1. Your submission should include only this page. Other forms of submissions will not be accepted. Please print this page, and write your solution on the back side.
2. Show your thought process in detail and organize it clearly.
3. Make sure your answer has the correct units and the right number of significant digits.

Question

A placekicker must kick a football from a point 36.0 m (about 40 yards) from the goal. Half the crowd hopes the ball will clear the crossbar, which is 3.05 m high. When kicked, the ball leaves the ground with a speed of 20.0 m/s at an angle of 50.0° to the horizontal.

1. By how much does the ball clear or fall short of clearing the crossbar? (Enter a negative answer if it falls short.)
2. Does the ball approach the crossbar while still rising or while falling?