Problem 7: Shot put

7a) A shot putter’s release height (where the shot leaves the hand) is $h_0 = 1.91$ m. He can propel the shot to a total velocity of $v_0 = 10.5$ m/s. What is the optimal release angle ($\alpha$) to achieve a maximum distance?

Problem 7 - II

7b) The previous question was largely idealized. Consider: The athlete is unlikely to change the angle without changing body position. How would this change? As soon as he changes the angle the velocity of the shot will be affected; which factors will play into this (anatomical, physics (energetics), ...)? How would a smaller shot affect the putting distance? (In simply 7a and more importantly in 7b)