

Name _____

PHY2048C, Practice Quiz 1

A- Read all the quiz once, or twice, before beginning to write. Make sure to comprehend all questions and start with those you feel most confident in.

B – Be clear and concise. There are no extra points for being verbose or writing extra.

C –Only use the white pages that I will provide. You have 60 minutes to answer the quiz.

Problem 1

Maria, Sofia, and Alberto have B./ 550 between them. The ratio between Alberto's and Sofia's money is 2:1 initially. Alberto spends some money, and now the ratio is 5:4 between the two, while Maria spends B./ 50 and the total money they all have now becomes B./ 200. How much money does Sofia have?

Problem 2 (OpenStax)

A commonly used unit of mass in the English system is the pound-mass, abbreviated lbm, where $1 \text{ lbm} = 0.454 \text{ kg}$. What is the density of water in pound-mass per cubic foot?

Problem 3 (OpenStax)

In a 100-m race, the winner is timed at 11.2 s. The second-place finisher's time is 11.6 s. How far is the second-place finisher behind the winner when she crosses the finish line? Assume the velocity of each runner is constant throughout the race.

End of Quiz (quizzes are always 3 problems total, the rest of the problems in this sheet are extra practice)

Problem 4 (Extra) Consider the equation $y = mt + b$, where the dimension of y is length and the dimension of t is time, and m and b are constants. What are the dimensions and SI units of (a) m and (b) b ?

Problem 5 (Extra) A pilot flies horizontally at 1300 km/h, at height $h = 35 \text{ m}$ above initially level ground. However, at time $t = 0$, the pilot begins to fly over ground sloping upward at angle $\theta = 4.3^\circ$ (Figure 1). If the pilot does not change the airplane's heading, at what time t does the plane strike the ground?

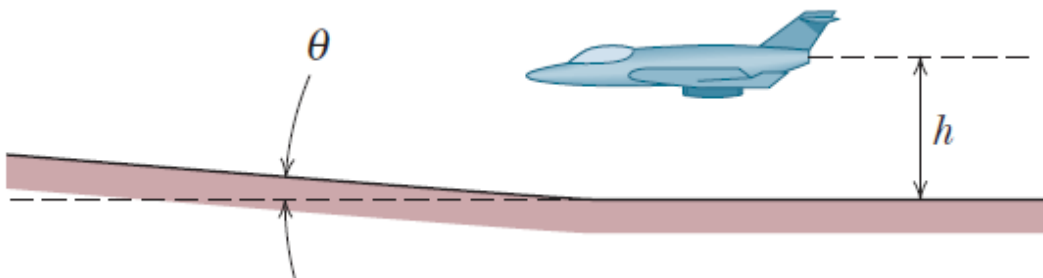


Figure 1