

COT 3100H Quiz #1: $d = rt$, logs, AS/GS Series, Prime Fact, Algebra (2/27/2023)

Last Name: _____ **First Name:** _____

1) (5 pts) Jazira lives 15 miles from work. If she drives at an average speed of r miles an hour, she arrives to work on time. If she drives $r - 10$ miles an hour instead, she'll arrive at work 24 minutes late. What is the value of r , in miles per hour?

2) (5 pts) Determine, to two decimal places, the value of $(\log_{10}20)(\log_{10}5)$, given that $\log_{10}2 = .30$, rounded to two decimal places. (Note: if you don't given information, you are doing the problem wrong.)

3) (5 pts) Let $a_1, a_2, a_3, \dots, a_{500}$ be an arithmetic series with a sum of 100,000.

If $\sum_{i=1}^{250} a_{2i} = 75,000$, what is the common difference of the sequence?

d = _____

4) (5 pts) The sum of four **distinct** prime numbers is 31. What is the **maximum possible value** of their product?

Max product = _____

5) (5 pts) It takes Jenny six hours to paint a house and Bob five hours to paint the same house. If Jenny, Bob and Malia all work together to paint that house, it would take them 2 hours to do so. How long would it take for Malia to paint this house on her own? **Please provide your answer in hours and minutes.** (ie 3 hours, 27 minutes)

____ hours ____ minutes

Scratch Page – Please clearly mark any work on this page you would like graded.