

Density Data Sheet

Student Name:

Partner Name:

Date

Instructor's Initials

Grade

Part One

Mass of Empty Pycnometer = 19.958 g

Volume of Pycnometer = 10.079 mL

Volume of Ethanol

Volume of Water

%Vol Ethanol

6.23 mL

7.09 mL

7.94 mL

9.25 mL

Mass of Ethanol + Water +
Pycnometer

Mass of Water + Ethanol

Density

28.7462 g

28.5378 g

28.3145 g

28.104 g

Mass of Ethanol +
Pycnometer

Mass of Ethanol

%Mass Ethanol

24.6772 g

25.6772 g

26.6772 g

27.6772 g

Density Data Sheet

Part Two

Mass of Unknown Solution + Pycnometer = 28.1354 g

Density of Unknown Solution =

Prepare a plot of **vol%** ethanol (x) vs. Density (y) for your known solutions. Your plot should have a descriptive title, axis labels (denoting units used), a linear trendline, an equation of the line, and a coefficient of determination (R^2). Upload your plot to Canvas.

Prepare a plot of **mass%** ethanol (x) vs. Density (y) for your known solutions. Your plot should have a descriptive title, axis labels (denoting units used), a linear trendline, an equation of the line, and a coefficient of determination (R^2). Upload your plot to Canvas.

Which of your two plots has a better R^2 value. What does this tell you about how well the equation of the line represents the general trend of the data? How can you explain any discrepancy between the two plots?

Determine the %mass of ethanol in your unknown sample based on its density. Show all your calculations.