

Name: _____

Date: _____

Density of Coins and Sig Figs lab

Problem: Identify the density of different coins while applying significant figures to lab measurements.

Background Information:

Remember this from the notes!

- When measuring with a mechanical instrument (ruler, triple beam balance etc), record all the digits that are marked on the instrument's scale and estimate (and only one) more digit.
- Densities of different metals.

Metal	Density (g/cm ³)
magnesium	1.74
aluminum	2.70
zinc	7.00
copper	8.92
silver	10.50
lead	11.35

1. Write a procedure on how you will identify what the coins are made of

2. How many digits will you record when measuring the volume?

3. To how many significant figures will the volume for your coins be?

Type of coin	Volume for Trial 1	Volume for Trial 2	Volume for Trial 3	Average Volume (Add all of the Volumes and divide by 3.00)
20 Pre-1982 Pennies				
20 Post-1982 Pennies				
20 Nickels				

4. How many digits will you record when measuring the mass?

5. To how many significant figures will the mass for your coins be?

Type of coin	Mass for Trial 1	Mass for Trial 2	Mass for Trial 3	Average Mass (Add all of the Masses and divide by 3.00)
20 Pre-1982 Pennies				
20 Post-1982 Pennies				
20 Nickels				

Type of Coin	Density
Pre-1982 Pennies	
Post-1982 Pennies	
Nickels	

6. How did you apply the significant figure rules for addition and subtraction in your calculations.
7. How did you apply the significant figure rules for multiplication and division in your calculations.
8. Based on your calculated density and the table below, which metal do you think is used in the core of post-1983 pennies? Explain your choice. (2-3 sentences minimum)
9. The actual density of post-1983 pennies is 7.05 g/cm^3 . How close was your calculation? Discuss possible sources of error and how you could improve your procedure in the future.(2-3 sentences minimum).