

Penny Lab at home

Name: _____ partner: _____

The United States penny has been made of 95% copper from 1980 - 1982. However, the price of copper had risen so much that the U.S. Treasury decided to change the penny's intended alloy. Hence, it was intended that the composition of the penny, for all 1983 pennies have been made of mostly zinc, with a thin copper layer on the outside. In this lab, you will determine the % zinc and % copper in a penny. To do this you will take advantage of the activity series of metals, and perform a single replacement reaction on the penny.

Procedure

1. Obtain a clean, unscratched penny (post 1982, the newer the better). You and your lab partner will each need different years so you can tell them apart! Record the years in the data table.
2. Using a file, carefully scratch the edge of your penny in two places, until the zinc core is showing.
3. Weigh each penny. Record the mass.
4. Place each penny in a beaker with ca. 50 mL of HCl. Label the beaker with your names. Remove the bubbling around the filed area. Set beaker aside in designated area.

— Day Two —

5. Decant HCl and rinse penny w/ water. Carefully remove penny & dry w/ paper towel.
6. Once dry, weigh copper shell and record mass.

Calculations / Questions

1. How much zinc was lost in penny 1? _____ g (mass - mass)

2. How much zinc was lost in penny 2? _____ g (mass - mass)

3. What is the % Zn in penny 1?

4. What is the % Zn in penny 2?

5. What is the average % Zn?

6. The actual % Zn in pennies is 2.45. Calculate % error. $(\text{actual} - \text{experimental}) \div \text{actual} \times 100$

7. Write the complete, balanced equation for the chemical reaction you did.

8. Assuming the average penny contains 2.50 g zinc, how much HCl is required to react the all of the zinc, without leaving any EXCESS HCl? (hint: look at stoichiometry section, w/ your teacher's advice before attempting this)



	Penny 1	Penny 2
Your Name:		
Penny Year:		
Initial Mass (g):		
Final Mass (g):		

Analysis Of A Penny Lab Answer Key

Michael E Green



Analysis Of A Penny Lab Answer Key:

Chemistry and Society Michael E Green, 2019 Floating Breakwaters Permanent International Association of Navigation Congresses. Permanent Technical Committee II. Working Group 13, 1994 Wind Energy 1975-1985 Penny Farmer, 2012-12-06 **Holt Science and Technology** Holt Rinehart & Winston, 2004 *Proceedings of the Section on Statistical Education* American Statistical Association. Section on Statistical Education, 1993 Papers presented at the annual meeting of the American Statistical Association The Jericho Flower Stephen F. Wilcox, 2002-01-31 Returning for his fourth misadventure small town newspaperman and social gadfly Elias Hackshaw finds himself immersed in a mystery involving a dead con man and a missing gypsy princess with the improbable name of Bimbo Wanka Through no fault of his own well almost none Hack becomes a suspect in the case when the cops mistakenly conclude that he was an acquaintance of the murdered con artist Meanwhile Bimbo s parents turn up on Hack s doorstep demanding he turn over their missing daughter or face a gypsy curse To add to the mayhem a local industrialist is badgering Hackshaw to oversee a major renovation to his monstrosity of a house and Hack s sister Ruth is hectoring him to forget everything else and see to his duties as editor of The Triton Advertiser Trapped by circumstance Hack begins poking into things and soon discovers a circus assortment of off beat characters gypsies in cowboy hats a con man with a conscience a sheriff s investigator without a heart or a brain ham fistied townies and much much more Only a strong survival instinct and his usual portion of dumb luck can save Hackshaw this time around Wilcox spins an entertaining yarn of murder and mayhem With a credible plot and eccentric characters that adroitly avoid being mere caricatures Wilcox offers a semi cozy mystery uncloying clever and far from brutal Publishers Weekly Wilcox is an absolutely first rate writer The Jericho Flower is a well crafted imaginative tale that this reader wished could go on for much longer It s a great read Midwest Book Review The Jericho Flower is a surprising deep amusing and character driven mystery that will keep you on your toes It s a mystery that keeps you hanging until the very end an unlikely hero who will keep you laughing and a full range of characters that opens you up to small town life a most involved and amusing mystery from this very talented author All About Murder **Examination Review for Ultrasound: Sonographic Principles & Instrumentation** Traci B Fox, Stephen M Penny, 2024-09-05 Prepare for and excel on the Sonography Principles and Instrumentation SPI certification examination offered by the ARDMS Traci B Fox and Steven M Penny s Examination Review for Ultrasound Sonographic Principles Instrumentation 3rd Edition focuses only on the content you ll encounter on the exam saving you valuable study time Now in full color throughout it uses a concise narrative approach aligns with the SPI revised content outline and format and features an online exam simulator with hundreds of registry style questions **Marketing Practices in the Gasoline Industry** United States. Congress. Senate. Committee on the Judiciary. Subcommittee on Antitrust and Monopoly, 1971 **Pressure Vessels and Piping** S. Y. Zamrik, David Dietrich, 1982 **Numerical Methods in Thermal Problems** Roland Wynne Lewis, Kenneth Morgan, 1985 **Numerical**

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something else Each twist and turn in the investigation by the detective brings a different conclusion to the story The ten unique alternate endings allow the reader to choose their own favorite solution to the mystery ten novels in one book

KillerSmile Jeffrey McGraw, 2002-08-06 KillerSmile the third Ross Malone thriller by creator Jeffrey McGraw finds the private investigator teetering on the edge of destruction His girlfriend volunteers his help to a troubled teenaged fan of her radio show The police think he murdered the congresswoman he was once paid to protect There s a bounty on his head from a blood feud with the local crime czar who is a sore loser That bull s eye on Ross Malone s back isn t a fashion statement And newfound friends provide newfound problems Heroes don t run Heroes fight back

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Table of Contents Analysis Of A Penny Lab Answer Key

1. Understanding the eBook Analysis Of A Penny Lab Answer Key
 - The Rise of Digital Reading Analysis Of A Penny Lab Answer Key
 - Advantages of eBooks Over Traditional Books
2. Identifying Analysis Of A Penny Lab Answer Key
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Analysis Of A Penny Lab Answer Key
 - User-Friendly Interface
4. Exploring eBook Recommendations from Analysis Of A Penny Lab Answer Key

- Personalized Recommendations
- Analysis Of A Penny Lab Answer Key User Reviews and Ratings
- Analysis Of A Penny Lab Answer Key and Bestseller Lists
- 5. Accessing Analysis Of A Penny Lab Answer Key Free and Paid eBooks
 - Analysis Of A Penny Lab Answer Key Public Domain eBooks
 - Analysis Of A Penny Lab Answer Key eBook Subscription Services
 - Analysis Of A Penny Lab Answer Key Budget-Friendly Options
- 6. Navigating Analysis Of A Penny Lab Answer Key eBook Formats
 - ePub, PDF, MOBI, and More
 - Analysis Of A Penny Lab Answer Key Compatibility with Devices
 - Analysis Of A Penny Lab Answer Key Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Analysis Of A Penny Lab Answer Key
 - Highlighting and Note-Taking Analysis Of A Penny Lab Answer Key
 - Interactive Elements Analysis Of A Penny Lab Answer Key
- 8. Staying Engaged with Analysis Of A Penny Lab Answer Key
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Analysis Of A Penny Lab Answer Key
- 9. Balancing eBooks and Physical Books Analysis Of A Penny Lab Answer Key
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Analysis Of A Penny Lab Answer Key
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Analysis Of A Penny Lab Answer Key
 - Setting Reading Goals Analysis Of A Penny Lab Answer Key
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Analysis Of A Penny Lab Answer Key

- Fact-Checking eBook Content of Analysis Of A Penny Lab Answer Key
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning
- Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
- Integration of Multimedia Elements
 - Interactive and Gamified eBooks

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