

Word Problems for the Wise

It all started like this: Birdie was doing some experiments in her cosmetics lab. Her mom called her for dinner, and in her haste to get to the table, Birdie left her beauty solution heating on the Bunsen burner.



As everyone knows, the ingredients for Birdie's products are both rare and costly. Her *Nighttime Beauty Slime* sells for \$39.98 per ounce. Since I know Birdie well, she gives me a 25% discount, but it's still pretty steep, especially after I pay the 5% tax.

To Loree's amazement, Birdie's face, her body, even her clothes started a transformation.

In any case, Birdie left her solution boiling for several hours, during which the volume was reduced from 324.5 mL to 278.4 mL. When she returned to the lab, Birdie called her associate, Loree to see what she had gotten on number 15 in the math homework. As she spoke, she noticed the bubbling solution and moved to cut off the burner. As she reached for it, it began to put out a bluish smoke.

"Cough! It's... Cough! Smoking... Must... get it off... ahhhh..." whispered Birdie as she slowly crumbled to the floor.

Alarmed, Loree quickly strapped on her jet-pack and rocketed off toward her friend's house. She arrived to find Birdie sitting up in a daze.

"I feel... strange," she mumbled.

To Loree's amazement, Birdie's face, her body, even her clothes started a transformation. Birdie began to age turning from a young girl to a grandmother.

"I don't know what's happening... Loree have you done your homework?... Hello Dearie! Would you like some cookies?" said Birdie as she underwent her metamorphosis.

"I...I... well, yes I think a cookie would be good... Wait a minute, Birdie, we've got trouble."

Quickly, Loree went to work on an antidote. She mixed 435.6 mL of pine tar with 389.2 mL of oatmeal juice and 656.4 mL of goat grease. Once these ingredients were blended, she poured off 10% into a garbage can, which caught fire and quickly melted to the floor.

"Hmmm..." said Loree doubtfully.

"It's nearly time for my favorite show, *Focus on Needlepoint*," said the new, old, Birdie, looking at her pocket watch.

Questions for you:

1. What was the mass of Loree's remedy, before she poured part of it into the trash can?
2. How much of the remedy was poured into the can and how much was left?
3. How much of Birdie's original solution evaporated while it was on the burner?
4. What does a cup of *Nighttime Beauty Slime* cost? What would you expect to pay for a pint?
5. How much do I pay for a cup with my discount before the tax?
6. How much do I pay after the tax?
7. If Loree had used twice as much goat grease, how much would that be?
8. If **Focus on Needlepoint** comes on at 5:20 PM, and runs until 9:10 PM, how long is the show?