# Penny Wars

Just the other day, Ms. Robinson was strolling around the Castilleja circle with a large sack of pennies. She first met Anna, who greeted her with a smile asking, "May I please have one-half of your pennies for penny wars?" Ms. Robinson was happy to accommodate and gave Anna one-half of her pennies, plus an addition 2 pennies since Anna asked so politely.

A little farther around the circle, Baylee stopped Ms. Robinson. "Good morning Ms. Robinson", Baylee said, "May I please have one-half of your pennies for penny wars?" Again, Ms. Robinson was happy to comply and gave Baylee one-half of the remaining pennies, plus two more since Baylee too asked so politely.

A hop, skip, and a jump later, Ms. Robinson ran into Charlotte. "Ms. Robinson, Ms. Robinson", Charlotte inquired, "May I please have one-half of your pennies for penny wars?" Ms. Robinson gladly gave Charlotte one-half of the remaining pennies, plus two more since Charlotte asked so politely. With that, Ms. Robinson headed straight for the Middle School to put her last 2 pennies in the 7th grade jar.

***The Question***

How many pennies did Ms. Robinson originally have in her sack?

***Extension Questions***

1. If Ms. Robinson ended with 4 pennies to put in the 7th grade jar, how many pennies did she originally have in her sack?

2. What is the minimum number of pennies that Ms. Robinson could have in her sack and still be able to give each student one-half of the remaining pennies plus 2 extra?

3. If Ms. Robinson ***ended*** with ***x*** pennies to put in the 7th grade jar, how many pennies did she originally have in her sack?

4. If Ms. Robinson ***started*** with ***y*** pennies in her sack, how many pennies did she put in the 7th grade jar.

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**Part 1 - Problem Solving:**

You will work with your **table group** to solve the problem, and **at least 2** of the extension questions. Be sure to work collaboratively – everyone in the group should understand the problem and the solution.

**Part 2 - Presentation of Solution:**

You will work **individually** to present your solution to the problem. For this POW, you will have a choice of how you present the solution. Options include:

1. Writing a paper. (2 pages max)
2. Creating a graphic comic. (3 pages max)
3. Filming a scene. (4 min max)
4. Filming an explanation. (3 min max)
5. Other _____ (please confirm with Ms. Robinson before starting).

Regardless of which option you choose, your work **must be submitted on Schoology**. Your work will be graded on the following:

**Information**

- ✓ In your own words, a clear explanation of the problem and the question being asked.

**Solution**

- ✓ A clear explanation of how to solve the problem, including proper mathematical notation. Be sure to **show** all of the work you do.

**Answers**

- ✓ Clearly stated answers to the main problem and **at least 2** extension questions. You also must justify how you know your answers are correct.

**Reflection**

- ✓ Reflect on the problem solving process. What went well? What was hard? What would you do differently in the future?

You will also be graded on **Effort and Completeness**. This means working collaboratively with your group, and submitting your work on time.