Sixty Pennies in a Row

There were sixty pennies in a row. A nickel replaced the second penny and every second penny after it. Next, a dime replaced the third coin and every third coin after it. Then a quarter replaced the fourth coin, and every fourth coin after it. Finally, a fifty-cent piece replaced the fifth coin, and every fifth coin after it.

Investigate the following:

1. What is the value of the sixty coins?

2. What pennies were never touched and why?

3. What positions were changed more than once and why?

4. If each sixth coin is now replaced with a silver dollar, what is the new value of the sixty coins?

Problem-solving procedure:

Describe that you did to solve this problem. Explain why you solved the problem the way you did. What strategies did you use? Show any drawing, diagrams, charts, tables, graphs that you used to solve the problem. How did you check your solution? What difficulties did you have along the way? How did you overcome these difficulties?

Conclusion:

Clearly describe your solution. Why do you think your solution is accurate? What observations can you make about your solution?