Sally and the Peanuts

You need: 1 sheet of paper, per person

On the way home from school, Sally McCrackin likes to eat peanuts. One day, just as she was reaching into her sack, a hideous, laughing creature jumped into her path, identified itself as a pig eyes, and grabbed her sack. It stole half of her peanuts plus two more. A bit shaken, Sally continued toward home. Before she had a chance to eat even one peanut, another horrid creature jumped into her path and also stole half of her peanuts plus two more. Upset, she continued on. (What else could she do?) But before she had a chance to eat even one peanut, another of these tricksters jumped out and did the very same thing – took half her peanuts plus two more.

Now there were only two peanuts left in Sally's sack. She was so despairing that she sat down and began to sob. The three little pig eyes reappeared, feeling some sense of remorse, and told her they would return all her peanuts to her if she told them how many she had altogether when she started.

How many peanuts had been in Sally's sack?

Extension

Other Sally and the Peanuts Problems. Suppose Sally had been left with three peanuts? Or there had been four nasty pig eyes that left her with just two peanuts? Can you find a way to predict how many peanuts Sally had in her sack to start with regardless of how many she was left with or regardless of how many pig eyes stole peanuts from her?