**Lower Elementary:**

*Question:* Santa can write 24 names on each foot of his list. How many names can Santa fit onto a list that is 4 feet long?

**Upper Elementary:**

*Question:* Santa has 9 reindeer: Dasher, Dancer, Prancer, Vixen, Comet, Cupid, Donner, Blitzen, and Rudolph. Dasher wears 11 jingle bells. Dancer wears 13 bells. Prancer wears 15 bells. If the pattern continues, how many bells do all 9 of Santa’s reindeer have in total?

**C:\Users\jane.adams\Desktop\Deeeeeeeeecember\POTW Dec 19\Rachel.pngMiddle School:**

*Question:* Rachel the Christmas elf can wrap 8 presents in 3 minutes. How long will it take Rachel to wrap 28 presents?

**Algebra and Up:**

*Question:* A dreidel has 4 sides. If a player spins the dreidel and it lands with “nun” facing up, the player does nothing. If “gimel” faces up, the player gets all the tokens. If “hey” faces up, the player gets half the tokens. If “shin” faces up, then the player must add a token to the pot. What is the probability that four people playing a round of dreidel will each take tokens if the round starts with 8 tokens in the pot?

**Lower Elementary:**

*Question:* Santa can write 24 names on each foot of his list. How many names can Santa fit onto a list that is 4 feet long?

*Answer:* 96 names

*Solution:* We can either add 24 + 24 + 24 + 24, or we can multiply. Twenty-four is one away from 25, and 25 × 4 = 100. That’s one extra, four times. 24 × 4 is the same as 100 – 4 = 96 names.

**Upper Elementary:**

*Question:* Santa has 9 reindeer: Dasher, Dancer, Prancer, Vixen, Comet, Cupid, Donner, Blitzen, and Rudolph. Dasher wears 11 jingle bells. Dancer wears 13 bells. Prancer wears 15 bells. If the pattern continues, how many bells do all 9 of Santa’s reindeer have in total?

*Answer:* 171 jingle bells

*Solution:* Each reindeer has 2 more jingle bells than the last. After Prancer with 15 bells, Vixen has 17, Comet has 19, Cupid has 21, Donner has 23, Blitzen has 25, and Rudolph has 27. The sum of all the jingle bells is 171.

Hint: A good strategy to use to add up all 9 addends is to match pairs of digits in the ones place that add up to 10 (e.g. 1 and 9).

**C:\Users\jane.adams\Desktop\Deeeeeeeeecember\POTW Dec 19\Rachel.pngMiddle School:**

*Question:* Rachel the Christmas elf can wrap 8 presents in 3 minutes. How long will it take Rachel to wrap 28 presents?

*Answer:* 10 minutes and 30 seconds

*Solution:* Eight presents goes into 28 presents 3½ times. So, Rachel needs 3 minutes, 3½ times to wrap 28 presents. 3 × 3½ = 10 minutes, or 10 minutes and 30 seconds.

**Algebra and Up:**

*Question:* A dreidel has 4 sides. If a player spins the dreidel and it lands with “nun” facing up, the player does nothing. If “gimel” faces up, the player gets all the tokens. If “hey” faces up, the player gets half the tokens. If “shin” faces up, then the player must add a token to the pot. What is the probability that four people playing a round of dreidel will each take tokens if the round starts with 8 tokens in the pot?

*Answer:* 1 out of 128

*Solution:* There are 2 ways to win tokens, “gimel” and “hey,” but in order for the everyone to have tokens available to them, only the last person can spin a “gimel.” For the first 3 players, the probability of getting “hey” is 1/4. The probability of the last player getting either “gimel” or “hey” is . So, the probability that each player will get tokens is 1/4 × 1/4 × 1/4 × 1/2 = 1/128.