# Carole's Challenge!

## December 25, 2021: A PRIME – Time

**December 25 is a very special day. Yes, it is Christmas. But…the 25?**

**Check these day facts:**

25 is the smallest 2-digit number where both digits are prime numbers AND

- The sum of the digits is a **prime number**:  2 + 5 = 7, **and**
- The difference between the two digits is a **prime number**:  5 – 2 = 3.

**Furthermore: When you square each digit and add, you get a prime number!**

$2^2 + 5^2 = 29$

**Now let's look at the digits that represent the month of December  –  12.**

**Check these month facts:**

- The sum of the digits is a **prime number**: 1 + 2 = 3
- $2^1$ is a **prime number.**
- 12 is the product of three **prime numbers**: 2 x 2 x 3 = 12

**Check these month and day numbers together: 1225**

- The sum of the digits is 10.
  And 10 is the product of two **prime numbers:** 10 = 2 x 5
- 2/2 x 1 x 5 = 5, and 5 is a **prime number.**
- The square root of 1225 is 35.
  And 35 is the product of two **prime numbers**:  5 x 7 = 35.

**Check the digits of the year: 2021**

- The sum of the digits is a **prime number**: 2 + 0 + 2 + 1 = 5
- And 2021 is the product of two **prime numbers**: 43  47 = 2021

**THE NEXT MAJOR HOLIDAY IS NEW YEAR'S EVE: 12 – 31 – 2021.**

**Now it is your turn to create the primes!!**