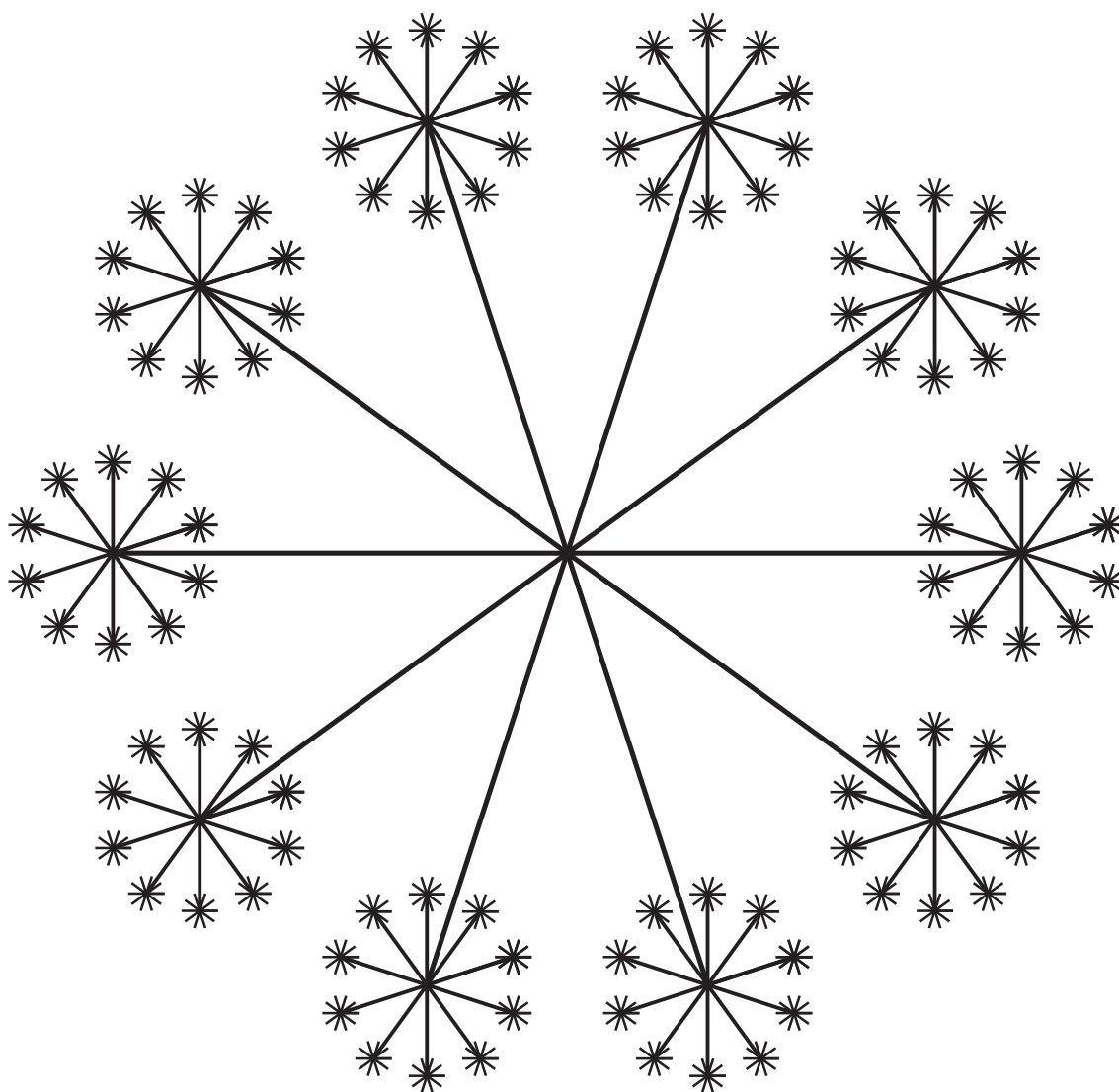


# Lesson 2: Powers of 10

- Let's use exponents to show powers of 10.

## Warm-up: How Many Do You See: Starburst

How many do you see? How do you see them?





2. In 1997, the population of India was about 1,000,000,000.
- How would you say this number?
  - How many millions is this? How many thousands is it? Explain or show your reasoning.
  - Write the number using powers of 10.
  - How many times would you need to extend the diagram from the warm-up to get 1,000,000,000 tiny segments? Explain or show your reasoning.

## 2.2: Powers of 10

1. Find the missing number that makes each equation true. Show your reasoning.

a.  $2,000 = \underline{\hspace{2cm}} \times 20$

b.  $20 \times 10 \times \underline{\hspace{2cm}} = 20,000$

c.  $\underline{\hspace{2cm}} \times 10 = 100,000$

d.  $1,000 \times 10,000 = \underline{\hspace{2cm}}$

2. How were products of 10s useful in solving these problems?

3. Write each power of 10 as a number.

a.  $10^3$

b.  $10^4$

c.  $10^7$

## 2.3: Beyond a Billion

1. How would you say the number 1,000,000,000,000?
2. How many billions is that? How many millions is it? Explain or show your reasoning.
3. Write the number using powers of 10.
4. Describe an example of something that there are 1,000,000,000,000 of in the world.