What is 10,000,000,000 in exponential form?

**1010**

What is 100,000,000,000,000 in exponential form?

**1014**

What is 0.001 in exponential form?

**10-3**

What is 0.00000001 in exponential form?

**10-8**

What is 0.00001 in exponential form?

**10-5**

What is 0.00000000001 in exponential form?

**10-11**

Which is smaller 0.01 or 10-3?

* 1. **= 10‑2**

**10-3 is smaller**

Which is larger 107 or 1,000,000?

**1,000,000 = 106**

**107 is larger**

Which is larger 0.0001 or 10-5?

**0.0001 = 10-4**

**0.0001 is larger**

Which is smaller 100,000 or 104?

**100,000 = 105**

**104 is smaller**

Place the following numbers from least to greatest:

107 10-4 100 10-9 1022 10-15

**10-15 10-9 10-4 100 107 1022**

Place the following numbers from greatest to least:

10-18 103 1012 10-4 107 10-2

**1012 107 103 10-2 10-4 10-18**

What is the smallest power of 10 that would exceed 576,345,256?

**109**

What is the smallest power of 10 that would exceed 45,678?

**105**

What is the smallest power of 10 that would exceed 34,000,000,000?

**1011**

What is the smallest power of 10 that would exceed 5,844,325?

**107**

The average person takes 30,000 breaths per day. Express this number as a single-digit integer times a power of 10.

**3 x 104**

Lake Ontario contains approximately 8,000,000,000 gallons of water. Write this number a single-digit integers times a power of 10.

**8 x 109**

The average American is responsible for about 20,000 kilograms of carbon emission pollution each year. Express the number as a single-digit integer times a power of ten.

**2 x 104**

Of the total world population, 682 million people are left-handed. Approximately how many people are left-handed as a single-digit times a power of ten.

**682,000,000**

**7 x 108**

A city has a population of 2,549,786 people. Estimate this population to the nearest million. Express your answer as the product of a single digit and a power of ten.

**3 x 106**

Estimate 0.037854921 to the nearest hundredth. Express your answer as a single digit times a power of ten.

**4 x 10-2**

Taylor made $43,785 last year. Use a single digit times a power of ten to express this value rounded to the nearest ten thousand.

**4 x 104**

Use a single digit times a power of 10 to estimate the number 0.00002468.

**2 x 10-5**

In the year 2013, the population of California was about 38,332,521 people. Write the estimated population as a single digit times a power of 10.

**4 x 107**

The wavelength of green light is about 0.00000051 meter. What is the estimated wavelength as a single digit times a power of 10?

**5 x 10-7**

Raquel estimated 304,900,000,000 as 3 x 108. What error did she make?

**She stopped moving the decimal after the 9, instead of after the 3.**

Kim writes an estimate for the number 0.00436 as 4 x 103. Explain why this cannot be correct.

**0.00436 is a decimal so the exponent should be -3.**

Janelle is comparing the estimated populations of Japan and China. He estimated population of Japan is 126,818,019. The estimated population of China is 1,402,941,487. Estimate each population. Compare the estimated values.

**Japan = 1.3 x 108**

**China = 1.4 x 109**

 **The population of China is larger.**

Country A has a population of 1,238,682,005 and Country B has a population of 1,106,487,394. Estimate each population. Compare the estimated values.

**Country A = 1.2 x 109**

**Country B = 1.1 x 109**

**The population of Country A I slarger.**

There are approximately 1,020,000,000 cars in the world. The number of cars in the United States is approximately 239,800,000. Compare the number of cars in the world to that in the United States.

**World = 109**

**United States = 2 x 108**

**The number of cars in the world is larger than the number of cars in the United States.**

Compare 6 x 10-6 and 2 x 10-8.

**6 x 10-6 > 2 x 10-8**