

Ex. 1: Megan's dad is 6 feet tall. Her little sister is 3 feet tall. How many times larger is Megan's dad than her little sister?

What would I multiply by?

$$\frac{6}{3} = 2 \text{ times larger}$$

To find this we need to divide.

Ex. 2: In 2010, the world population was about 6.86×10^9 , 6,860,000,000.

The population of the United States was about 3×10^8 . About how many times larger is the world population than the population of the United States?

$$\frac{6.86 \times 10^9}{3 \times 10^8}$$

$$\frac{6.86}{3} \times \frac{10^9}{10^8}$$

$$2.286666 \times 10^1$$

$$2.29 \times 10^1 = 22.9 \text{ times larger}$$

Ex. 3: The surface area of Lake Superior, the largest of the Great Lakes, is 8×10^4 square kilometers. The surface area of the smallest Great Lake, Ontario, is 18,160 square kilometers. About how many times as great is the area covered by Lake Superior than Lake Ontario?

$$\frac{8 \times 10^4}{1.816 \times 10^4}$$

$$\frac{8}{1.816} \times \frac{10^4}{10^4}$$

$$4.405286344$$

4.405 times as great

Ex. 4: Wyoming has a deer population of 4.3×10^6 . There are 7.2×10^5 deer in Utah. Which state has a greater deer population and by how much?

Wyoming has a greater population

$$3.58 \times 10^6$$

$$\begin{array}{r} 4.3 \times 10^6 \\ - 7.2 \times 10^5 \\ \hline 3.58 \times 10^6 \end{array}$$

Ex. 5: The areas of the world's oceans are listed in the table. What is the combined area of the Atlantic, Arctic, Indian, & Southern oceans?

Ocean	Area (mi ²)
- Atlantic	2.96×10^7
- Arctic	5.43×10^6
- Indian	2.65×10^7
Pacific	6×10^7
- Southern	7.85×10^6

$$\begin{array}{r} 2.96 \times 10^7 \\ 2.65 \times 10^7 \\ 7.85 \times 10^6 \\ + 5.43 \times 10^6 \\ \hline 6.938 \times 10^7 \end{array}$$

$$\begin{array}{r} 2.96 \times 10^7 \\ 2.65 \times 10^7 \\ 0.785 \times 10^7 \\ + 0.543 \times 10^7 \\ \hline 6.938 \times 10^7 \end{array}$$

Ex. 6: The population of India is 1.276×10^9 people. The area of the nation of India is 1.269×10^6 square miles. What is the population density of India?

$$\text{density} = \frac{\text{population}}{\text{area}}$$

$$\frac{1.276 \times 10^9}{1.269 \times 10^6}$$

$$1.005516154 \times 10^3$$

$$1.006 \times 10^3$$

Ex. 7 The southern border of the state of Colorado is 3.8×10^2 miles. The western border of Colorado is 2.8×10^2 miles long. What is the area of the state of Colorado?

$$\text{Area} = L \times W$$

$$(2.8 \times 10^2)(3.8 \times 10^2)$$

$$(2.8 \cdot 3.8)(10^2 \cdot 10^2)$$

$$10.64 \times 10^{4+1}$$

$$1.064 \times 10^5$$

