

8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.

Argentina has a population of approximately 4×10^7 people, and Switzerland has a population of approximately 8×10^6 people. How many times greater is Argentina's population than Switzerland's?

- A) 2 B) 4 **C) 5** D) 7

$\frac{40,000,000}{8,000,000} = 5$

How long would it take a rocket to travel 4×10^6 miles if its speed was 1.6×10^3 miles per hour?

- A) 6.4×10^9 hours C) 6.4×10^{10} hours
B) 2.5×10^3 hours D) 2.5×10^2 hours

1600 m/h

$\frac{4,000,000}{1600} = 2500$

Malcolm sent 1.2×10^3 text messages last month. At this rate, about how many text messages will Malcolm send in 1 year?

- A) 14.4×10^3 texts
 B) 1.44×10^5 texts
C) 1.44×10^4 texts
 D) 14.4×10^4 texts.

$1.2 \times 10^3 (12)$

$\frac{1200}{12}$

14400

Find the quotient: $(3 \times 10^6) \div (2 \times 10^{-2})$

- A) 1.5×10^4
B) 1.5×10^8
 C) 6×10^4
 D) 6×10^8

$\frac{3 \times 10^6}{2 \times 10^{-2}} = 1.5 \times 10^8$

The table shows the population estimates for 3 countries in scientific notation.

Population Estimates

Country	Number of People
P	5.4×10^8
Q	6.0×10^8
R	3.0×10^5

Part A: What number, written in scientific notation, represents the combined total population of countries P and Q? Show your work and explain your answer.

$5.4 \times 10^8 + 6.0 \times 10^8$

$\frac{540000000}{600000000}$
 1140000000

1.14×10^9

Part B: How many times greater is the population of Q than the population of R? Show your work or explain your answer.

$\frac{6.0 \times 10^8}{3.0 \times 10^5} = 2.0 \times 10^3$

Part C: The population of P is predicted to increase by 10% during the next 20 years. What number, written in scientific notation, represents the predicted total population of P? Show your work.

5.4×10^8

540,000,000 (current population)

$\times .10$

54,000,000.00 (increase)

$\frac{540,000,000.00}{594,000,000}$

594,000,000

5.94×10^8

total population