

Scientific Notation Worksheets

The table below shows the debt of the three most populous states and the three least populous states.

State	Debt (in dollars)	Population (2012)
California	407,000,000,000	38,000,000
New York	337,000,000,000	19,000,000
Texas	276,000,000,000	26,000,000
North Dakota	4,000,000,000	690,000
Vermont	4,000,000,000	626,000
Wyoming	2,000,000,000	576,000

1. What is the sum of the debts for the three most populous states? Express your answer in scientific notation.

2. What is the sum of the debt for the three least populous states? Express your answer in scientific notation.

3. How much larger is the combined debt of the three most populous states than that of the three least populous states? Express your answer in scientific notation.

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4. What is the sum of the population of the three most populous states? Express your answer in scientific notation

5. What is the sum of the population of the three least populous states? Express your answer in scientific notation.

6. Approximately how many times greater is the total population of California, New York, and Texas compared to the total population of North Dakota, Vermont, and Wyoming?

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1. What is the sum of the debts for the three most populous states? Express your answer in scientific notation.

$$\begin{aligned}(4.07 \times 10^{11}) + (3.37 \times 10^{11}) + (2.76 \times 10^{11}) &= (4.07 + 3.37 + 2.76) \times 10^{11} \\ &= 10.2 \times 10^{11} \\ &= 1.02 \times 10^{12}\end{aligned}$$

2. What is the sum of the debt for the three least populous states? Express your answer in scientific notation.

$$\begin{aligned}(4 \times 10^9) + (4 \times 10^9) + (2 \times 10^9) \\ &= (4 + 4 + 2) \times 10^9 = 10 \times 10^9 \\ &= (1 \times 10) \times 10^9 = 1 \times 10^{10}\end{aligned}$$

3. How much larger is the combined debt of the three most populous states than that of the three least populous states? Express your answer in scientific notation.

$$\begin{aligned}(1.02 \times 10^{12}) - (1 \times 10^{10}) &= (1.02 \times 10^2 \times 10^{10}) - (1 \times 10^{10}) \\ &= (102 \times 10^{10}) - (1 \times 10^{10}) = (102 - 1) \times 10^{10} = 101 \times 10^{10} \\ &= 1.01 \times 10^{12}\end{aligned}$$

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4. What is the sum of the population of the three most populous states? Express your answer in scientific notation

$$\begin{aligned} & (3.8 \times 10^7) + (1.9 \times 10^7) + (2.6 \times 10^7) \\ & = (3.8 + 1.9 + 2.6) \times 10^7 = 8.3 \times 10^7 \end{aligned}$$

5. What is the sum of the population of the three least populous states? Express your answer in scientific notation.

$$\begin{aligned} & (6.9 \times 10^5) + (6.26 \times 10^5) + (5.76 \times 10^5) \\ & = (6.9 + 6.26 + 5.76) \times 10^5 = 18.92 \times 10^5 \\ & = (1.892 \times 10) \times 10^5 = 1.892 \times 10^6 \end{aligned}$$

6. Approximately how many times greater is the total population of California, New York, and Texas compared to the total population of North Dakota, Vermont, and Wyoming?

$$\begin{aligned} \frac{8.3 \times 10^7}{1.892 \times 10^6} &= \frac{8.3}{1.892} \times \frac{10^7}{10^6} \\ &\approx 4.39 \times 10 = 43.9 \end{aligned}$$

The combined population of California, New York, and Texas is about 43.9 times greater than the combined population of North Dakota, Vermont, and Wyoming.