

Name _____

Date _____

Math 8R; Mrs. Roubos

Period _____

Scientific Notation Review #1

1. Simplify: $5^3 \cdot 5^5 \cdot 5$	2. What is 96,000,000 in scientific notation?
3. Simplify: $\frac{8^8}{8^5}$	4. Subtract. Leave answer in scientific notation. $(8.5 \times 10^4) - (4.3 \times 10^4)$
5. Write $<$, $>$, or $=$ between the two values. 6.38×10^{-7} _____ 6.2×10^{-4}	6. Write $<$, $>$, or $=$ between the two values. 9.7×10^5 _____ 5.2×10^3
7. List in order from least to greatest. 2.87×10^3 , 5.8×10^{-4} , 4.5×10^{-3} , 4.6×10^3	8. What is 0.00000352 in scientific notation?
9. Which is not equivalent to 4^{-2} ? A. $\frac{1}{4^2}$ B. $\frac{1}{16}$ C. -16 D. $\frac{1}{4} \cdot \frac{1}{4}$	10. Simplify: $(5^{-2})^4$

11. Simplify: 11^0

12. A bee's wings can beat about 6.32×10^5 times an hour. How is this number written in standard form?

13. Find the quotient. Leave in scientific notation.

$$\frac{8.2 \times 10^6}{2 \times 10^3}$$

14. In 2004, there were about 8.25×10^6 dogs kept as pets in the U.S. In the same year, there were about 9.15×10^8 cats kept as pets in the U.S.

About how many dogs and cats were kept as pets in total? Leave your answer in scientific notation.

15. The land area of Connecticut is about 6.8×10^4 square miles. What would be the area of land that is 1000 times greater? Leave your answer in scientific notation.

16. In 2012, the population of Canada was about 5.42×10^6 . The population of the U.S. was about 4.12×10^8 . About how much more was the population of the U.S. than Canada? Leave your answer in scientific notation.

17. The table below shows the area in square miles of certain states. Which state has the largest area?

State	Area (mi ²)
New York	1.64×10^5
Ohio	4.48×10^4
Oregon	9.84×10^6
Illinois	9.62×10^3

18. Find the difference of 3.5×10^7 and 22,000. Leave your answer in scientific notation.

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Scientific Notation Review #1

1. Simplify: $5^3 \cdot 5^5 \cdot 5^1 = 5^{3+5+1}$ ** keep base*
** add exponents*
 5^9

2. What is 96,000,000 in scientific notation?
 9.6×10^7
** (2nd) (DRG) \rightarrow SCI (=)*

3. Simplify: $\frac{8^8}{8^5} = 8^{8-5}$ ** keep base*
** subtract exponents*
 8^3

4. Subtract. Leave answer in scientific notation.
 $(8.5 \times 10^4) - (4.3 \times 10^4)$
 4.2×10^4
** must use parentheses in calculator*

Write <, >, or = between the two values.
** Compare exponents first*
 $6.38 \times 10^7 < 6.2 \times 10^{-4}$
 $-7 < -4$

6. Write <, >, or = between the two values.
** Compare exponents*
 $9.7 \times 10^5 > 5.2 \times 10^3$
 $5 > 3$

7. List in order from least to greatest.
** Compare exponents then the coefficients*
 $2.87 \times 10^3, 5.8 \times 10^{-4}, 4.5 \times 10^{-3}, 4.6 \times 10^3$
 $5.8 \times 10^{-4}, 4.5 \times 10^{-3}, 2.87 \times 10^3, 4.6 \times 10^3$

8. What is 0.00000352 in scientific notation?
 3.52×10^{-6}
** (2nd) (DRG) \rightarrow SCI (=) SCI make*

9. Which is not equivalent to $4^{-2} \cdot \frac{1}{4^2} \cdot \frac{1}{44} = \frac{1}{16}$?
 A. $\frac{1}{4^2}$ ✓ B. $\frac{1}{16}$ ✓ C. -16 D. $\frac{1}{4} \cdot \frac{1}{4}$
(2nd) (PRB) to make into a fraction

10. Simplify: $(5^{-2})^4$ ** keep base * multiply exponents*
 $5^{-2 \cdot 4} = 5^{-8} = \frac{1}{5^8} = \frac{1}{390625}$
(2nd) (PRB) to make into a fraction

11. Simplify: 11^0

1

12. A bee's wings can beat about 6.32×10^5 times an hour. How is this number written in standard form?

632,000

(2nd) (DIG) (L) FLO (S) [FLU] male

13. Find the quotient. Leave in scientific notation.

Divide

$\frac{8.2 \times 10^6}{2 \times 10^3}$

must use () in work + in calc!

$(8.2 \times 10^6) \div (2 \times 10^3) =$

4.1 x 10³

14. In 2004, there were about 8.25×10^6 dogs kept as pets in the U.S. In the same year, there were about 9.15×10^8 cats kept as pets in the U.S.

add

About how many dogs and cats were kept as pets in total? Leave your answer in scientific notation.

must use parentheses

$(8.25 \times 10^6) + (9.15 \times 10^8)$

9.2325 x 10⁸

15. The land area of Connecticut is about 6.8×10^4 square miles. What would be the area of land that is 1000 times greater? Leave your answer in scientific notation.

multiply

$(6.8 \times 10^4) \cdot (1,000) =$

must use parentheses

6.8 x 10⁷

16. In 2012, the population of Canada was about 5.42×10^6 . The population of the U.S. was about 4.12×10^8 . About how much more was the population of the U.S. than Canada? Leave your answer in scientific notation.

subtract

1st 2nd

must use parentheses

$(4.12 \times 10^8) - (5.42 \times 10^6) =$

4.0658 x 10⁸

17. The table below shows the area in square miles of certain states. Which state has the largest area?

Compare exponents

State	Area (mi ²)
New York	1.64×10^5
Ohio	4.48×10^4
Oregon	9.84×10^6
Illinois	9.62×10^3

Oregon

18. Find the difference of 3.5×10^7 and 22,000. Leave your answer in scientific notation.

subtract

$(3.5 \times 10^7) - (22,000)$

must use parentheses

3.4978 x 10⁷