

Name _____

Date _____

Mr. Tallman

Review Sheet - Exponents and Scientific Notation

Things to Study:

1. Study Lessons 8-15
2. Study Quiz 2
3. Study homework assignments 8-15
4. Study both review sheets.

Evaluate the following exponents. Write your answer in STANDARD FORM.

1) 10^{-4}

0.0001

2) $(-4)^{-2}$

0.0625

3) 2^0

1

4) 2^{-3}

$\frac{1}{2^3} = \frac{1}{8}$

5) -3^2

-9

6) $(-3)^2$

9

Simplify the following exponents. Write your answer in EXPONENTIAL FORM.

7) $(3)^2 \times (3)^3$
 3^5

8) $\frac{2^3}{2^5} 2^{-2} = \frac{1}{2^2}$

9) $(4^3)^5 = 4^{15}$

10) $5^5 \cdot 5^6 = 5^{11}$

11) $3^{11} \div 3^{-4} = 3^{15}$

12) $(2^4)^5 = 2^{20}$

Write each number in SCIENTIFIC NOTATION

13) 445,000,000

4.45×10^8

14) 0.00563

5.63×10^{-3}

15) 22.5×10^4

2.25×10^5

16) 0.45×10^6

4.5×10^5

17) 0.006

6×10^{-3}

18) $325 \times 10^{7+2}$

3.25×10^9

Write each number in standard form.

19) 4.5×10^5

450,000

20) 3.76×10^{-4}

0.000376

0.000376

For 21-26, Solve the following. Leave your answer in SCIENTIFIC NOTATION

21) What is the quotient of $\frac{6.72 \times 10^9}{3.2 \times 10^2}$?

2.1×10^7

22) What is the product of $(1.7 \times 10^9) \cdot (1.4 \times 10^2)$?

2.38×10^{11}

23) What is the quotient of $(16.9 \times 10^{18}) \div (2.6 \times 10^3)$?

6.5×10^{15}

24) $(8.42 \times 10^3) - (6.5 \times 10^3)$

1900
 1.9×10^3

25) $(5.3 \times 10^7) + (4.25 \times 10^5)$

~~53425000~~
 5.3425×10^7

26) $(7.32 \times 10^{-3}) + (4.6 \times 10^{-6})$

0.0073246
 7.3246×10^{-3}

27) In 2010, the population of Sweden was about 9.413×10^6 . The population of Switzerland was about 7.783×10^6 . About how much more was the population of Sweden than the population of Switzerland?

Write your answer in Scientific Notation.

$(9.413 \times 10^6) - (7.783 \times 10^6)$

~~1630000~~
 1.63×10^6

28) The land area of Connecticut is about 4.8×10^3 square miles. The land area of New Mexico is about 1.2×10^5 square miles. About how many times greater is the land area of New Mexico than the land area of Connecticut?

$$\frac{1.2 \times 10^5}{4.8 \times 10^3} = 25 = 2.5 \times 10^1$$

29) In 2011 the population of England was about 6.32×10^7 . The population of France was about 8.53×10^5 . What was their total combined population?

$$(6.32 \times 10^7) + (8.53 \times 10^5)$$

64053000

$$6.4053 \times 10^7$$

Compare the following using $<$, $>$, or $=$

30) $7.8 \times 10^{(7)}$ $>$ $7.8 \times 10^{(8)}$

31) $(-4.5) \times 10^2$ $<$ $(-2) \times 10^2$

32) $3.2 \times 10^{(-10)}$ $<$ $3.2 \times 10^{(10)}$

33) $3.5 \times 10^{(3)}$ $<$ $5.6 \times 10^{(6)}$

Place the following Numbers in order from Least to Greatest

34) 2.65×10^3 , 6.7×10^{-5} , 4.25×10^6

6.7×10^{-5} , 2.65×10^3 , 4.25×10^6

35) 6.3×10^3 , 2.5×10^3 , 8.6×10^3

2.5×10^3 , 6.3×10^3 , 8.6×10^3