NAME _____ DATE _____ PERIOD _____

Exponents Review Sheet with Answers

SCORE _____

Practice and Check your answers when you are done.. If you are struggling see help on bottom of page

Write the letter for the correct answer in the blank at the right of each question.

1. What is the value of the expression $(-4)^3$?

A. –64 **B.** –12 **C.** 12 **D.** 64

1. A

2. Using exponents, what is the simplified form of the expression $\frac{12x^5}{6x^2}$?

F. 2^3 **G.** 6^3 **H.** $6x^3$ **I.** $2x^3$

2. I

3. Using exponents, what is the simplified form of the expression $(-3x^4y^2)^2$?

A. $-6x^6y^4$ **B.** $6x^6y^4$ **C.** $-9x^8y^4$ **D.** $9x^8y^4$

3. C

4. How is the expression 10^{-5} written using a positive exponent?

F. -10^5 **G.** $\frac{1}{10^5}$ **H.** 10^{-5} **I.** 0.0001

4. G

5. The Statue of Liberty weighs 450,000 pounds. What is this number written in scientific notation?

A. 4.5×10^{-5} **C.** 4.5×10^4

B. 4.5×10^{-4} **D.** 4.5×10^5

5. D

6. What is 3.471×10^{-5} written in standard form?

A. 3,471,000 **B.** 347,100 **C.** 0.0003471 **D.** 0.00003471

6. D

7. What is the value of the expression below written in scientific notation?

$$(2.5 \times 10^3)(3 \times 10^2)$$

A. 750,000 **B.** 7.5×10^5 **C.** 7,500,000 **D.** 7.5×10^6

7. B

8. What is the value of the expression below written in scientific notation?

$$(4.7 \times 10^5) - (2.8 \times 10^3)$$

F. 467,200 **H.** 1.9×10^3

G. 4.672×10^5 **I.** 1.9×10^2

8. G

9. The speed of light is approximately 3×10^8 meters per second, while the speed of sound is approximately 3.4×10^2 meters per second. How many times faster is the speed of light than the speed of sound?

A. 9×10^3 **B.** 9×10^4 **C.** 9×10^5 **D.** 9×10^6

9. C

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10. The top speed of a cheetah is approximately 1.2×10^2 kilometers per hour, while the speed of the fastest human is approximately 4×10^1 kilometers per hour. How many times faster is the top speed of a cheetah than the speed of a human?
Which statement is true?

10. **A**

A. The cheetah is 3 times fasters than the human
B. The cheetah is 30 times faster than the human
C. The human is 3 times faster than the cheetah
D. The human is 30 times faster than the cheetah

THINGS TO REMEMBER

Laws of Exponents

Product law
1.) Keep the base the same
2.) Add the exponents

Quotient Law
1.) Keep the base the same
2.) Subtract the exponents

Power to a Power
1.) Keep the base the same
2.) Multiply the exponents

Multiply Monomials

1.) Multiply Coefficients
2.) Keep the base (variable) the same
3.) Add Exponents

Divide Monomials

1.) Divide Coefficients
2.) Keep the base (variable) the same
3.) Subtract the exponents

Negative Exponents

1.) Take the reciprocal
2.) Make the exponents positive

Zero Exponents

Anything to the zero power is 1

Add /Subtract Scientific Notation

1.) Put the #'s in standard form
2.) Add/subtract
3.) Put the answer in scientific notation

Multiply #'s in Scientific Notation

1.) Multiply decimals
2.) Keep the 10 the same
3.) Add exponents
4.) Make sure answer is in scientific notation

*lose a decimal, gain an exponent
*gain a decimal, lose an exponent

Divide #'s in Scientific Notation

1.) Divide decimals
2.) Keep the 10 the same
3.) Subtract exponents
4.) Make sure answer is in scientific notation

*lose a decimal, gain an exponent
*gain a decimal, lose an exponent

Addition Word Problems

- Combined
- Altogether
- increased
- Sum

Subtraction Word Problems

- Decreased
- Difference
- How many more
- how MUCH greater
  longer
  wider
  more

Unit Rate Words

- Per day
- Each day
- Every day
- A day
- One day
- daily

Multiplication Word Problems

- Unit rate is GIVEN
- Find the area or volume
- Product

Division Word Problems

- FIND the unit rate
- How many TIMES greater

Place Value

Ten Thousandths	.0001
Thousandths	.001
Hundredths	.01
Tenths	.1
Ones	1
Tens	10
Hundreds	100
Thousands	1,000
Ten Thousand	10,000
Hundred thousand	100,000
Millions	1,000,000
Billions	1,000,000,000
Trillions	1,000,000,000,000