

Review for Test #1 - Exponents

Name: _____ Class: _____

1.) Which shows 5^4 in standard form?

- (A) 20 (B) 625 (C) 1,024 (D) 3,125

2.) Which is $6^3 \times 6^4$ in exponential form?

- (A) 36^{12} (B) 7^6 (C) 6^{12} (D) 6^7

3.) Which shows 9^{-3} in standard form?

- (A) 729 (B) 27 (C) $\frac{1}{27}$ (D) $\frac{1}{729}$

4.) Which shows $(11^6)^2$ in exponential form?

- (A) 22^6 (B) 11^{12} (C) 11^8 (D) 11^4

5.) Which shows $4^5 \div 4^6$ in standard form?

- (A) -4 (B) $\frac{1}{4}$ (C) 1 (D) 4

6.) Which shows $2^{-2} \times 2^6$ in exponential form?

- (A) 2^4 (B) 2^{-4} (C) 2^{-8} (D) 2^{-12}

7.) Which shows $(2^2)^{-2}$ in standard form?

- (A) 0 (B) $\frac{1}{16}$ (C) $\frac{1}{8}$ (D) 1

8.) Which shows $6^{-1} \div 6^{-4}$ in exponential form?

- (A) $\frac{1}{6^5}$ (B) $\frac{1}{6^3}$ (C) 6^1 (D) 6^3



9.) What is one third of 3^{12} ?

- (A) 3^4 (B) 3^{11} (C) 1^4 (D) 1^{11}

10.) What is one half of 2^{10} ?

- (A) 1^5 (B) 1^9 (C) 2^5 (D) 2^9

11.) What is the value of 5^0 ? _____

12.) Rewrite this expression with only one exponent: $2^3 \times 2^4 \times 2^5 \times 2^6 =$ _____

13.) Fill in the boxes (blanks) in the equations below:

a.) $(x^2)^{\text{---}} = x^6$

e.) $7^2 \cdot 7^{\text{---}} = 7^5$

b.) $(x^{\text{---}})^3 = x^{-12}$

f.) $9 \times 9 \times 9^3 = 9^{\text{---}}$

c.) $x^{\text{---}} = 1$

g.) $5^{-3} = \frac{1}{5^{\text{---}}}$

d.) $4^8 \div 4^{\text{---}} = 4^2$



14.) Rewrite the following expressions using a positive exponent.

a.) 3^{-7}

c.) $\frac{4^5}{4^8}$

b.) $9^4 \cdot 9^{-10}$

d.) $(8^8)^{-3}$

15.) Express $4^2 \cdot 4^{-5}$ in standard form.

16.) Simplify the expressions below.

a.) $(3x^5)^3$

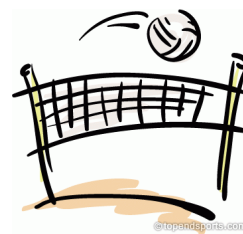
d.) $(2x^8)^6$

b.) $\frac{18x^8y^9}{-3x^7y^4}$

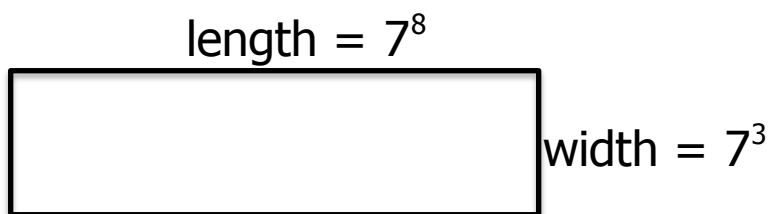
e.) $\frac{-40a^{10}b^6}{-10ab^5}$

c.) $\frac{x^9}{x^{-8}}$

f.) $\frac{35c^{-4}}{7c^{-11}}$



17.) Find the area of the rectangle below. Express the answer in exponential notation with a base of 7.



18.) Evaluate each of the expressions below. Show your work.

$-9^2 =$ _____

$(-9)^2 =$ _____

$9^{-2} =$ _____

19.) Which of the two products below will result in a positive answer? Explain your reasoning.

$(-5)^{11}$ or $(-5)^{14}$ (Circle one)

- 20.) Your best friend tells you a secret and asks you not to tell anyone. However, the next day you tell 2 other friends the secret. The day after that, each of them tells 2 other friends the secret. If this pattern continues, how many people will know the secret in 1 week's time? Create a chart to show your work.



What is this value in exponential notation? _____

- 21.) Jake saw Insidious: Chapter 2 this past weekend. On Monday, Jake told 4 friends about the movie. The day after that, each of those friends told 4 more friends about the movie. If this pattern continued, how many people would have been told about the movie by Friday? Create a chart to show your work.

What is this value in exponential notation? _____

- 22.) Earth has a diameter of about 10^4 kilometers. The diameter of the Sun is approximately 10^6 kilometers. How many times as great as the Sun's diameter is Earth's diameter? Express your answer with exponential notation with a base of 10.



- 23.) How many times bigger is 3^8 than 3^2 ? Express your answer in exponential notation with a base of 3.