**Exponent Properties:**

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| --- | --- |
| **Multiply Same Bases = \_\_\_\_\_\_\_\_\_\_\_\_ Exponents**$$x^{a}\*x^{b}=x^{\\_\\_\\_\\_\\_\\_\\_\\_\\_}\\_$$ | **Exponent of 0 = \_\_\_\_\_\_\_**$$x^{0}=\\_\\_\\_\\_\\_\\_\\_\\_$$ |
| **Divide Same Bases = \_\_\_\_\_\_\_\_\_\_\_\_ Exponents**$$\frac{x^{a}}{x^{b}}=x^{\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_}$$ | **Fraction Raised to Exponent = Multiply Exponents to Numerator and Denominator**$$\left(\frac{x^{a}}{y^{b}}\right)^{c}=\frac{x^{\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_}}{y^{\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_}}$$ |
| **Exponent Raised to Exponent = \_\_\_\_\_\_\_\_\_\_\_\_\_Exponents**$$\left(x^{a}\right)^{b}=x^{\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_}$$ | **Negative Exponents**$$x^{-a}=\frac{1}{\\_\\_\\_\\_\\_\\_\\_\\_\\_}$$ |

1. If $j^{6}<j^{3}$, which of the following could be a value for j?

a) 6 b) 1 c) 0 d) 1/3 e) -1/3

2.$ 2^{2}\*2^{5}=$

3. $\frac{r^{6}}{r^{2}}=$

4. $\left(y^{7}\right)^{4}=$

5. If the yth term in a sequence is $3(2^{y})$ what is the 10th term in the sequence?

a) 60 b) 1,024 c) 1,536 d) 3,072 e) 6,144

11. Jody is picking a movie to watch this evening. Of the movies in her cabinet, 9 are romantic comedies. She will pick one movie at random. If the probability of the selected movie being a romantic comedy is 25%, how many movies are on the shelf?

a) 9 b) 24 c) 25 d) 36 e) 48

6. If $64^{12}=4^{x}, x=$?

a) 4 b) 24 c) 36 d) 72 e) 192

7. If $3/7$ of z is 42, what is 5/7 of z?

a) 10 b) 18 c) 45 d) 70 e) 98

12. A store owner raises the price of a $50 item 20%. After it does not sell, he reduces the price by 20%. What is the final price of the item?

a) $48 b) $49 c) $50 d) $60 e) $100

8. The regular price for a certain bicycle is $125.00. If that price is reduced by 20%, what is the new price?

a) $100 b) $105 c) $112.50 d) $120.00 e) $122.50

9. In a group of 25 students, 16 are female. What percentage of the group is female?

a) 16% b) 40% c) 60% d) 64% e) 75%

13. In 1950, the populations of town X and town Y were equal. From 1950-1960, the population of town X increased by 60% and the population of town Y decreased by 60%. In 1960, the population of town Y was what % of the population of town X?

a) 25% b) 36% c) 40% d) 60% e) 120%

10. If 115% of a number is 460, what is 75% of the number?

a) 280 b) 300 c) 320 d) 345 e) 400