



- *20 questions
- *Calculators allowed during some question
- *Show all work/steps- use separate paper
- *Recommend time frame 45min -60min

Concept of Powers and Exponents

1. True or False: Properties of exponents only apply to variables not real numbers?
2. Use the properties of exponents to finish the statement, $a^m \times a^n =$
3. Zero to the zero power, 0^0 , is equal to zero?
4. Is there a property of exponents that could help us simplify, $2^5 + 2^3$?
5. How do powers and exponents help us in mathematics? (hint: scientific notation)

Properties of Exponents

Directions: Use the property of exponents to fully simplify the expressions – no negative exponents in your final answer

6. π^0
7. $(x^2y)(xy^3)$
8. $(yz^2x^4)^5$
9. t^{-2}

10.
$$\frac{xw^5}{w^{-4}x}$$

11.
$$\frac{a^3b^2c^5}{a^{-3}b^{-4}c}$$

12.
$$(yz^2x^4)^3 (yz^3x^{-4})^5$$

13.
$$\frac{a^4b^{-4}c^5}{a^{-3}b^{-4}c} \div \frac{a^3b^2c^5}{a^{-3}b^2c}$$

Scientific Notation

14. Write the number in scientific notation 2,350,000

15. Write the number in decimal form(take out of scientific notation) 3.68×10^{-6} 16. Which number is greater? .000005323 or 6.7×10^{-5} 17. Simplify and write your answer in scientific notation
$$\frac{7.8 \times 10^{-4} \times 3598000}{-.00045}$$

Compound Interest

18. What is the difference between principal and interest?

19. Your grandmother gives you \$2000 for college. She tells you to invest the money in a savings account that pays 6% interest compounded yearly. How much will your account balance be after 5 years?

20. You are given two investments to select from, which will earn you more money?

Investment A:

Starting amount: \$10 Type: your balance doubles every month Duration: 1 year

Investment B:

Starting amount: \$2000 Type: compounded annually at 8% interest Duration: 1 year