

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

Algebra 1

Chapter 7 test - Study guide

Directions: Simplify each of the following WITHOUT the use of a calculator. Each question is worth 1 point and each mistake will be a  $\frac{1}{2}$  point off (no, you can't lose more than a point per question for multiple errors). **PLEASE CIRCLE YOUR FINAL ANSWER!**

1.  $(b^5)^{-14}$

2.  $a^0 \cdot a^{-26} \cdot a^{10}$

3.  $(x^{-3})^{-5}(x^3)^8$

4.  $\frac{36a^2b^{10}}{-40b^{14}}$

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

6.  $\frac{21a^{-8}e^{15}}{-7a^{-9}e^{-3}}$

7.  $(2a^{23}b^{-5})(5a^2b^{-7}c^4)^0$

8.  $\frac{(4p^3r^{-4})^2}{(-4p^{-2}r^5)^{-1}}$

$$9. \frac{(4a^3b^{-2}c^5)^3}{b^5}$$

$$10. 3x^3y^{-4}z^0 \cdot -2x^{20}y^{-1} \cdot 10x^{-23}z^{10}$$

$$11. \frac{5r^4s^2 \cdot 6rs}{10r^{10}}$$

$$12. \frac{(a^{-2})^{-4}a^2}{-4a^{-6}}$$

$$13. -2d^5 \cdot 3d^{-3}$$

$$14. (4h^4)^{-3} \cdot (h^{-2})^4$$

$$15. 3^2x^3b^{-3} \cdot 2x^{-5}b^9$$

$$16. (5b^4c^{-3})^{-2}$$

$$17. \frac{3^{-2}a^4b^{-4}c^{-3}d^{-10}}{9a^2b^{-3}c^4d^3}$$

$$18. \left( \frac{2f^3g^{-5}h^{-3}}{3gh^{-3}} \right)^3$$

Evaluate each expression for  $a = -3$  ,  $b = 5$  , and  $c = 1$ . Circle your final answer.

19.  $(ab + c)^a$

20.  $3ab^2 + c$

21.  $\frac{2b^{-2}c}{a^{-1}}$

22. What is the length of a rectangle that has a side length of  $7x^8$  and an area of  $28x^5$  ?

**Convert each number in standard notation into scientific notation.**

23. -123,000,000,000 \_\_\_\_\_

24. 0.0000000421 \_\_\_\_\_

**Convert each number in scientific notation into standard notation.**

25.  $4.56 \times 10^{-5}$  \_\_\_\_\_

26.  $8.4 \times 10^7$  \_\_\_\_\_