

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## STUDY GUIDE - Exponents

**M.8.EE.1** Use the properties of integer exponents to generate equivalent numerical expressions.

What is the simplified form of each expression?

1.  $(5)^{-3}$

2.  $6c^{-10}m^7$

3.  $(-7.4)^0$

4.  $5p^{-9}h^4$

5.  $\frac{4}{x^{-7}y^3}$

6.  $4k^9 \cdot 2k^6$

7.  $(-2g^5) \cdot 6h^4 \cdot 3g^2$

8.  $9x^{-4} \cdot 2x^2$

What rule are you applying to #'s 6-8?

9.  $(t^9)^4$

10.  $(q^{-5})^4$

11.  $(k^{-8})^4$

What rule are you applying to #'s 9-11?

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14.  $\frac{d^8}{d^{-2}}$

15.  $\frac{e^{-8}}{e^4}$

16.  $\frac{f^3}{f^{-3}}$

What rule are you applying to #'s 14-16?

8.EE.1 – Know and apply the properties of integer exponents to generate equivalent numerical expressions.

17. Which of the following expressions is **not** equivalent to  $\frac{1}{64}$  ?

A.  $8^{-3} \times 8$

B.  $8^7 \times 8^{-9}$

C.  $8^{-2} \times 8^0$

D.  $8^{-5} \times 8^{-7}$

18. Which of the following IS equivalent to  $2^3 + 2^2$  ?

A. 12

B.  $2^5$

C.  $4^5$

D.  $3 + 3^2$

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19. Write the number below in **standard notation**.

$$4^{-7} \times 4^5 \times 4^0 \quad \underline{\hspace{2cm}}$$

20. Write each number below in exponential form:

a)  $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x = \underline{\hspace{2cm}}$

b)  $(-4)(-4) = \underline{\hspace{2cm}}$

c)  $y^{15} \cdot y^9 = \underline{\hspace{2cm}}$