Name: _____

(1-3) Write each of the following in exponential form.

1. $(7)(7)(7)(7)(7)(7)(7)(7)$ =_____

2. $(-9)(-9)(-9)(-9)$ =_____

3. $(\frac{4}{5})(\frac{4}{5})(\frac{4}{5})$ = _____

(4-9) Write an equivalent expression for each of the following. Leave answers in exponential form.

4. $9^3 \cdot 9^2$ = _____

5. $2^5 \cdot 2$ = _____

6. $3^{-4} \cdot 3^6$ = _____

7. $12^7 \cdot 12^{-8}$ = _____

8. $8^{-3} \cdot 8^{-9}$ = _____

9. $4^{10} \cdot 16$ = _____

(10-11) Fill in each box with the missing number which will make each statement true.

10. $C^{\square} \cdot C^3 = C^{12}$

11. $W^7 \div W^{\square} = W^5$

(12-17) Write an equivalent expression for each of the following. Leave in exponential form.

12. $\dfrac{2^{14}}{2^5} =$

13. $\dfrac{10^6}{10^9} =$

14. $\dfrac{25^{-14}}{25^{-19}} =$

15. $\dfrac{3^{10}}{3^{-2}} =$

16. $\dfrac{r^{-7}}{r^6} =$

17. $\dfrac{a^3 \cdot b^7}{a \cdot b^2} =$

18. A rectangle has a length represented by 8w and a width represented by 6w. What is the **area** of the rectangle expressed in terms of w? Show work.

Area: _____

19. What number, written in exponential form, can be substituted for m in the equation below?

$7^3 \bullet m = 7^9$ m = _____   Explain: _____

_____

20. Simplify: Show work. $\left(\dfrac{5}{d^2}\right)\left(\dfrac{4d^9}{2}\right) =$

21. Multiply: $(2x^3y^5)(9x^4y)$ =