Products of Powers WS Student: _____

1. How is this expression 4^{10} read?

2. Consider $10x^8$. Name each of the following:

a. base b. exponent c. coefficient

#3-5, Write each using exponents.

3. 21 • w • w • w **4.** x • a • m • a • m • a • a • a **5.** 12 • 25 • 25 • 25 • 25

#6-10- Products: simplify each

6. $n^3 \cdot n^5$ **7.** $(5x^3)(6x^2)(x^4)$ **8.** $(-2a^3b^6c^2)(9a^5bc^0)$ **9.** 5y • y **10.** $\frac{4hk^3}{7} \cdot \frac{11hk^5}{2}$

#11-15, Powers: simplify each

11. $(a^2)^4$ **12.** $(3x^5)^3$ **13.** $(2^4)^5$ **14.** $(x^n)^{10}$ **15.** $(-m^5np)^3$

#16-26 Mixed: simplify each

16. $(10e^2l^3f)(4el^4)$ **17.** $(2x^2)(2x)^3$ **18.** $(3ho)(2ho)$ **19.** $[(-x^3)^2]^4$

20. $(6a^{10}b)^2(6b)^3$ **21.** $\left(\frac{mn}{3}\right)^2 \cdot \left(\frac{2m^6}{3}\right)^3$ **22.** $4w^5(-5w^2)^3$ **23.** $(5w^2)^2)^2$

24. $p(-pq)^4 \cdot p^3(4pq^2)^2$ **25.** $(3y^2)(5y^2)+(3y^2)(5y^2)$ **26.** [(a)(2a)(3a)]^4

27. Find the perimeter and area of the figure to right.

Perimeter:

Area: