

1. How is this expression 4^{10} read? **four to the tenth**

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

a. base

x

b. exponent

8

c. coefficient

10

#3-5, Write each using exponents.

3. $21 \cdot w \cdot w \cdot w$

$21w^3$

4. $x \cdot a \cdot m \cdot a \cdot m \cdot a \cdot a \cdot a$

$a^5 m^2 x$

5. $12 \cdot 25 \cdot 25 \cdot 25 \cdot 25$

$12 \cdot 25^4$

#6-10- Products: simplify each

6. $n^3 \cdot n^5$

n^8

7. $(5x^3)(6x^2)(x^4)$

$30x^9$

8. $(-2a^3b^6c^2)(9a^5bc^0)$

$-18a^8b^7c^2$

9. $5y \cdot y$

$5y^2$

10. $\frac{4hk^3}{7} \cdot \frac{11hk^5}{2}$

$\frac{22h^2k^8}{7}$

#11-15, Powers: simplify each

11. $(a^2)^4$

a^8

12. $(3x^5)^3$

$27x^{15}$

13. $(2^4)^5$

2^{20}

14. $(x^n)^{10}$

x^{10n}

15. $(-m^5np)^3$

$-m^{15}n^3p^3$

#16-26 Mixed: simplify each

16. $(10e^2l^3f)(4el^4)$

$40e^3l^7f$

17. $(2x^2)(2x)^3$

$2x^2 \cdot 8x^3$

$16x^5$

18. $(3ho)(2ho)$

$6h^2o^2$

19. $[(-x^3)^2]^4$

$(-x^3)^8$

x^{24}

20. $(6a^{10}b)^2(6b)^3$

$36a^{20}b^2 \cdot 216b^3$

~~$7776a^{20}b^5$~~

~~$3888a^{20}b^5$~~

$7776a^{20}b^5$

21. $\left(\frac{mn}{3}\right)^2 \cdot \left(\frac{2m^6}{3}\right)^3$

$\frac{m^2n^2}{9} \cdot \frac{8m^{18}}{27}$

$\frac{8m^{20}n^2}{243}$

22. $4w^5(-5w^3)^3$

$4w^5 - 125w^6$

$-500w^{11}$

23. $(5w^2)^2)^2$

$(5w^2)^4$

5^4w^8

$625w^8$

24. $p(-pq)^4 \cdot p^3(4pq^2)^2$

$16p^{10}q^8$

25. $(3y^2)(5y^2) + (3y^2)(5y^2)$

$15y^4 + 15y^4$

$30y^4$

26. $[(a)(2a)(3a)]^4$

$(6a^3)^4$

$1296a^{12}$

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

Perimeter: $14x$

Area:

$9x^2 + 2x^2 = 11x^2$

