

Solve. Remember the basic rules:1) When multiplying exponents, if the bases are the same, (circle one) **add OR multiply** the exponents.2) If a power is raised to another power, (circle one) **add OR multiply** the exponents.3) If $m = 2n^3$ then what is m^2 ?**Simplify and write answers as EXPONENTS.**

4) $4^2 \cdot 4^6$

5) $3^3 \cdot 3$

6) $(-7)^4 \cdot (-7)^5$

7) $2^4 \cdot 2^9 \cdot 2$

8) $(3^5)^2$

9) $[(-5)^3]^4$

Simplify the expression.

10) $x^4 \cdot x^2$

11) $z^2 \cdot z \cdot z^3$

12) $(x^5)^2$

13) $(-5x)^2$

14) $(7xy)^2$

15) $(-10x^6)^2 \cdot x^2$

16) $6d^2 \cdot (2d^5)^4$

17) $(3x^5)^3 (2x^7)^2$

18) $-(-xy^2z^3)^5 (x^4yz)^2$

Find the missing exponent.


19) $x^4 \cdot x^? = x^5$

20) $(x^8)^? = x^{16}$

21) $(2x^?)^3 = 8x^{15}$

22) $(3x^3)^? \cdot 2x^3 = 18x^9$

23) **Error Analysis.** Describe and correct the error in simplifying $c \cdot c^4 \cdot c^5$.

$$\begin{aligned}
 c \cdot c^4 \cdot c^5 &= c^1 \cdot c^4 \cdot c^5 \\
 &= c^{1 \cdot 4 \cdot 5} \\
 &= c^{20}
 \end{aligned}$$


____ 24) Which expression is equivalent to $36x^{12}$?

[A] $(6x^3)^4$

[B] $12x^4 \cdot 3x^3$

[C] $3x^3 \cdot (4x^3)^3$

[D] $(6x^5)^2 \cdot x^2$

____ 25) If $y = x^2$, which of the following is equivalent to x^8 ?

[A] y^4

[B] y^8

[C] y^{14}

[D] y^{16}

26) Write a simplified expression to represent the area of a square with the sides measuring $3x^4y^5$ units. (Hint: Equation is $A = s^2$)

$3x^4y^5$

