Key

Multiplication Properties Day 1

SIMPLIFYING EXPRESSIONS Simplify the expression. Write your answer using exponents.

3. $4^2 \cdot 4^6$
4. $8^5 \cdot 8^2$
5. $3^3 \cdot 3$
6. $9 \cdot 9^5$
7. $(-7)^4(-7)^5$
8. $(-6)^6(-6)$
9. $2^4 \cdot 2^9 \cdot 2$
10. $(-3)^2(-3)^{11}(-3)$
11. $(3^5)^2$
12. $(7^4)^3$
13. $[(-5)^3]^4$
14. $[(-8)^9]^2$
15. $(15 \cdot 29)^3$
16. $(17 \cdot 16)^4$
17. $(132 \cdot 9)^6$
18. $((-14) \cdot 22)^5$

SIMPLIFYING EXPRESSIONS Simplify the expression.

19. $x^4 \cdot x^2$
20. $y^9 \cdot y$
21. $z^2 \cdot z \cdot z^3$
22. $a^4 \cdot a^3 \cdot a^{10}$
23. $(x^5)^2$
24. $(y^4)^6$
25. $[(b-2)^2]^6$
26. $[(d+9)^7]^3$
27. $(-5x)^2$
28. $-(5x)^2$
29. $(7xy)^2$
30. $(5pq)^3$
31. $(-10x^6)^2 \cdot x^2$
32. $(-8m^4)^2 \cdot m^3$
33. $6d^2 \cdot (2d^5)^4$
34. $(-20x^3)^2(-x^7)$
35. $-(2p^4)^3(-1.5p^7)$
36. $\left(\frac{1}{2}y^5\right)^3(2y^2)^4$
37. $(3x^5)^3(2x^7)^2$
38. $(-10n)^2(-4n^3)^3$

(3) 4^8 (4) 8^7 (5) 3^4 (6) 9^6 (7) $(-7)^9$ (8) $(-6)^7$ (9) 2^{14}

(10) $(-3)^{14}$ (11) 3^{10} (12) 7^{12} (13) $(-5)^{12}$ (14) $(-8)^{18}$ (15) $15^3 \cdot 29^3$

(16) $17^4 \cdot 16^4$ (17) $132^6 \cdot 9^6$ (18) $(-14)^5 \cdot 22^5$ (19) x^6 (20) y^{10} (21) z^6

(22) a^{17} (23) x^{10} (24) y^{24} (25) $(b-2)^{12}$ (26) $(d+6)^{21}$

(27) $(-5)^2x^2$
$= \boxed{25x^2}$

(28) -5^2x^2
$= \boxed{-25x^2}$

(29) $7^2x^2y^2$
$= \boxed{49x^2y^2}$

(30) $5^3p^3q^3$
$= \boxed{125p^3q^3}$

(31) $(-10)^2x^{12}x^2$
$= \boxed{100x^{14}}$

(32) $(-8)^2m^8m^3$
$= \boxed{64m^{11}}$

(33) $6d^2 \cdot 2^4d^{20}$
$= 6d^2 \cdot 16d^{20}$
$= \boxed{96d^{22}}$

(34) $(-20)^2x^6 - 1x^7$
$= \boxed{-400x^{13}}$

(35) $-1(2)^3p^{12}(-1.5)p^7$
$= \boxed{12p^{19}}$

(36) $\left(\frac{1}{2}\right)^3y^{15} \cdot 2^4y^8$
$= \left(\frac{1}{8}\right) \cdot 16 \cdot y^{23}$
$= \boxed{2y^{23}}$

(37) $3^3x^{15} \cdot 2^2x^{14}$
$= 27x^{15} \cdot 4x^{14}$
$= \boxed{108x^{29}}$

(38) $(-10)^2n^2(-4)^3n^9$
$= 100n^2 \cdot (-64)n^9$
$= \boxed{-6400n^{11}}$