

Algebra 1 Exponent Practice Day 2

Part 1

Simplify each of the following.

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|---|--|---|--|--|
| 1) $a \cdot a^2 \cdot a^3$
a^6 | 2) $(2a^2b)(4ab^2)$
$8a^3b^3$ | 3) $(6x^2)(-3x^5)$
$-18x^7$ | 4) $b^3 \cdot b^4 \cdot b^7 \cdot b$
b^{15} | 5) $(3x^3)(3x^4)(-3x^2)$
$-27x^9$ |
| 6) $(2x^2y^3)^2$
$4x^4y^6$ | 7) $(5x^2y^4)^3$
$125x^6y^{12}$ | 8) $(6x^4y^6)^3$
$216x^{12}y^{18}$ | 9) $(4x^3y^3)^3$
$64x^9y^9$ | 10) $(7xy)^2$
$49x^2y^2$ |
| 11) $\frac{x^3}{x}$
x^2 | 12) $\frac{18c^3}{-3c^2}$
$-6c$ | 13) $\frac{9a^3b^5}{-3ab^2}$
$-3a^2b^3$ | 14) $\frac{-48c^2d^4}{-8cd}$
$6cd^3$ | 15) $\frac{22y^6z^8}{2yz^{-7}}$
$11y^5z^{15}$ |
| 16) $x^2 \cdot x^7$
x^9 | 17) $(x^2)^7$
x^{14} | 18) $(-2x^4)^5$
$-32x^{20}$ | 19) $2x^3 + 7x^3$
$9x^3$ | 20) 7^0
1 |
| 21) $8x^0$
8 | 22) -3^4
-81 | 23) $(-3)^4$
81 | 24) $6x^6y^8 - (2y^2)^4$
$-10y^8$ | 25) $(x+2y)(x-2y)$ |
| 26) $\frac{2x^3}{-8x^4}$
$-\frac{1}{4x}$ | 27) $\frac{xy^7}{x^3y^4}$
$\frac{y^3}{x}$ | 28) $6x^5 \cdot 3x^3 \cdot x^0$
$18x^{10}$ | 29) $(3st^{12})^3$
$27s^3t^{36}$ | 30) $\left(\frac{3m^2n^7}{m}\right)^5$
$243m^5n^{35}$ |

Part 2

Write each radical using rational exponents.

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|------------------------------|----------------------------|
| 7. $\sqrt{7}$ $7^{1/2}$ | 8. $\sqrt{15}$ $15^{1/2}$ |
| 9. $\sqrt[3]{6^4}$ $6^{4/3}$ | 10. $\sqrt[3]{2^3}$ 2 |
| 11. $\sqrt[4]{2^4}$ 2 | 12. $\sqrt{8^3}$ $8^{3/2}$ |

Write each radical using rational exponents.

SEE EXAMPLE 1

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|-------------------------------|-----------------------------------|
| 25. $\sqrt{3}$ $3^{1/2}$ | 26. $\sqrt[3]{7}$ $7^{1/3}$ |
| 27. $\sqrt[3]{3^2}$ $3^{2/3}$ | 28. $\sqrt[4]{2^{-5}}$ $2^{-5/4}$ |
| 29. $\sqrt[3]{a^2}$ $a^{2/3}$ | 30. $\sqrt{b^2}$ $b^{2/2}$ |