

EXTRA PRACTICE — Exercises

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Unit V – Second Degree Relations and Higher - Polynomials Part A – Exponent Notation

Lesson 2 – Operations with Powers

Find each product of powers for each of the following, using exponent notation. If the product cannot be found, say so.

1. $x^4 \cdot x^3$

2. $4^5 \cdot 4^{-3}$

3. $y^7 \cdot y^{-2}$

4. $8^{-3} \cdot 8^7$

5. $9^{-1} \cdot 9^7$

6. $x^{-3} \cdot x^5 \cdot x^2$

7. $8^{-2} \cdot 8^3$

8. $(2x)^3 \cdot (2x)^4$

9. $x^{4t} \cdot x^{3t}$

10. $(-2)^{-3} \cdot (-2)^7$

Find the quotient of powers for each of the following, using exponent notation. If the quotient cannot be found, say so.

11. $\frac{5^7}{5^3}$

12. $\frac{6^5}{6^{-3}}$

13. $\frac{9^{-2}}{9^{-5}}$

14. $\frac{4^8}{4^5}$

15. $\frac{2^7}{2^{-2}}$

16. $\frac{x^4}{y^3}$

17. $\frac{x^{3n}}{x^{2n}}$

18. $\frac{y^{11x}}{y^{-6x}}$

19. $\frac{x^{p+q}}{x^{p-q}}$

20. $\frac{a^{3x^2}}{a^{2x^2}}$

Find the power of powers for each of the following using exponent notation.

21. $(x^5)^7$

22. $(a^{-5})^{-4}$

23. $(y^{-2})^{-2}$

24. $(x^4)^{2t}$

25. $(9^{-3})^{-4}$

26. $\left(m^{\frac{1}{2}}\right)^{\frac{1}{4}}$

27. $(-3^2)^3$

28. $(-3^x)^y$

29. $(q^2)^{a+b}$

30. $(x^{a+b})^3$

EXTRA PRACTICE — Answer Key

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Find each product of powers for each of the following, using exponent notation. If the product cannot be found, say so.

1. x^7

2. 16

3. y^5

4. 4096

5. 531,441

6. x^4

7. 8

8. $128x^7$

9. x^{7t}

10. 16

Find the quotient of powers for each of the following, using exponent notation. If the quotient cannot be found, say so.

11. 625

12. 1,679,616

13. 729

14. 64

15. 512

16. Cannot be done

17. x^n

18. y^{17x}

19. x^{2q}

20. a^{x^2}

Find the power of powers for each of the following using exponent notation.

21. x^{35}

22. a^{20}

23. y^4

24. x^{8t}

25. 9^{12}

26. $m^{\frac{1}{8}}$

27. 729

28. -3^{xy}

29. q^{2a+2b}

30. x^{3a+3b}