HOMEWORK PACKET

Unit 3 – Algebraic Expressions

Topics

The Distributive Property

Simplifying Algebraic Expressions

Adding Linear Expressions

Subtracting Linear Expressions

Factoring Linear Expressions

Name:_____

Team:_____ Math Period:_____ Teacher:_____

Lesson 1 Homework Practice

The Distributive Property

Use the Distributive Property to write each expression as an equivalent expression. Then evaluate the expression.

1. $6(80 + 1)$

2. $7(70 - 4)$

3. $(300 + 6)\frac{2}{3}$

4. $(100 + 10)9$

5. $\frac{1}{5}(400 - 90)$

6. $-8(700 - 3)$

7. $4(20 - 9)$

8. $(100 - 3)(-7)$

9. $-1(75 - 9)$

10. $14(21 - 11)$

11. $-25(80 + 2)$

12. $31(450 - 18)$

Use the Distributive Property to write each expression as an equivalent algebraic expression.

13. $7(y + 11)$

14. $-6(t - 1)$

15. $-8(u - 2)$

16. $(r + 9)(-4)$

17. $-1(-h + 5)$

18. $-2(f + 3)$

19. $-4(b - 1)$

20. $1(7 - v)$

21. $-2(d - 5)$

22. $\frac{2}{5}(n + 10)$

23. $-50(z - 1)$

24. $-12(g + 12)$

25. $17(p + 4)$

26. $(k - 21)(-8)$

27. $(s - 32)(-9)$

28. $-28(a - 5)$

29. $-20(19 - a)$

30. $3.3(d + 4)$

31. $-18(-q - 5)$

32. $-16(c + 45)$

33. $-19(v - 1)$

34. $-1(r + 27)$

35. $5.3(x + 11)$

36. $-17(-n + 1)$

37. A planter weighs 2 pounds and holds 3 pounds of soil. Write two equivalent expressions for the total weight of nine planters. Then find the weight.

38. A uniform costs \$42 for the sweater and \$29 for the slacks. Write two equivalent expressions for the total cost of six uniforms. Then find the cost.

Lesson 2 Homework Practice

Simplifying Algebraic Expressions

Identify the terms, like terms, coefficients, and constants in each expression.

1. $6y - 4 + y$

2. $8u + 2u - 3u$

3. $-12h + 5g + 8 - g$

4. $-21w + 5 + 3w - 1$

5. $8a + b - 3a + 4b$

6. $f - 3fg + 2g - fg + 1$

Simplify each expression.

7. $-8q + 6 + 5q - 3$

8. $h + 5h - 3 - 6h$

9. $2a - 5(a + 1)$

10. $b - 2(b - 2)$

11. $9 - t - 3(t + 3)$

12. $-8 + 5(g + 2) - 2$

13. $12m + 9 - 2m - 16$

14. $4(y - 3) + 9 - 3y$

15. $r + r + r + r + r$

16. $-11x + 4 + 8x - 4 + 3x$

17. $-14y + 12(x + y) - 12x$

18. $19g - 4h + 4 - 20(g - 1)$

19. $-5(c + d) - 4d + 5c - d$

20. $(8 - b)(-3) + 6b + 12 - 10b$

21. $-p + q + 2(p + q) - p - q$

22. $-55n + 28n + 21n + 7n - n$

23. $-12z + 4(z - 9) + 30 + z$

For each situation, write an expression in simplest form that represents the total amount.

24. You bought 3 pieces of chicken that cost x dollars each, a salad for \$3, and a drink for \$1.

25. Sal has scored g goals this season. Ben has scored four times as many goals as Sal. Chun has scored three fewer goals than Ben.

Math Accelerated • **Chapter 7** Algebraic Expressions

Lesson 3 Homework Practice

Adding Linear Expressions

Add. Use models if needed.

1. $(5x + 21) + (10x + 13)$

2. $(-9x + 12) + (-5x + 14)$

3. $(-4x + 6) + (6x - 10)$

4. $(4x + 17) + (15x - 16)$

5. $(-3x - 1) + (-x - 9)$

6. $(2x - 6) + (-7x + 5)$

7. $(-x + 27) + (16x + 4)$

8. $(-16x - 14) + (13x + 26)$

9. $(3 + 12x) + (-8x + 4)$

10. $(5 + 16x) + (18 + 6x)$

11. $(14x + 8) + (-12x + 3)$

12. $(-7x - 6) + (-3x - 5)$

13. $(-25x + 19) + (9x - 6)$

14. $(20x + 19) + (-21x - 14)$

15. $(2x - 8) + (7x - 1) + (-5x + 6)$

16. $(-15x - 3) + (7x - 6) + (-2x + 9)$

17. $(-3x + 10) + (-2x - 11) + (-3x - 12)$

18. $(1 + 4x) + (-5x + 22) + (-8x + 3)$

19. $(6x - 7) + (4x - 2) + (-9x + 3) + (2x + 4)$

20. A company can model the profit it makes on selling an item at price x by using the expression $2000x - 10{,}500$. A second item sold at the same price brings in a profit of $1850x - 11{,}600$. Write and simplify an expression that reflects the total profit from the sale of both items.

Lesson 4 Homework Practice

Subtracting Linear Expressions

Subtract. Use models if needed.

1. $(2x - 5) - (x - 3)$

2. $(3x + 6) - (2x + 2)$

3. $(x - 8) - (x - 5)$

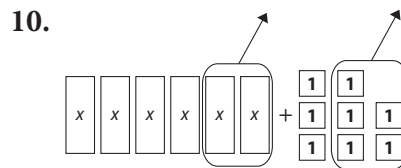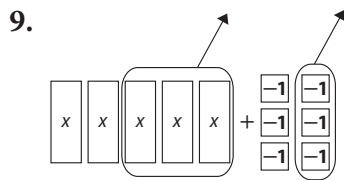**4.** $(4x + 8) - (3x + 4)$

5. $(-1 + 5x) - (-4x - 3)$

6. $(9x - 11) - (-5x + 3)$

7. $(8x + 2) - (12x + 15)$

8. $(-2x - 1) - (-6 - 8x)$

Write the subtraction problems modeled in the problems shown.

9.

10.

Subtract. Use models if needed.

11. $(6x - 1) - (2x - 5)$

12. $(7x + 3) - (x + 9)$

13. $(x - 2) - (x - 9)$
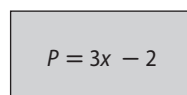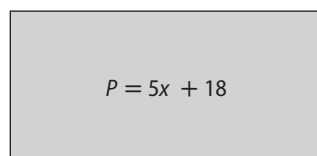
14. $(6x + 3) - (3x + 8)$

15. $(2x - 10) - (4x + 8)$

16. $(3x - 6) - (-x + 2)$

17. $(-3x + 8) - (-5x - 2)$

18. $(9x + 4) - (-5x - 7)$

19. What is the difference in the perimeters of the two figures below?

$P = 3x - 2$

$P = 5x + 18$

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Lesson 5 Homework Practice

Factoring Linear Expressions

Find the GCF of each pair of monomials.

1. 20, 45x

2. 15r, 25

3. 8xy, 14x

4. 30w, 70w

5. 4st, 12s

6. 11gh, 33g

7. 16mn, 24m

8. 25f, 60g

9. 33c, 55cd

10. 50j, 75jk

11. 27cd, 72cde

12. 48t, 60st

Factor each expression. If the expression cannot be factored, write *cannot be factored*. Use algebra tiles if needed.

13. $4x + 12$

14. $8r - 14$

15. $5x + 35$

16. $7 + 14x$

17. $32x - 15$

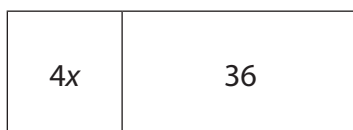**18.** $24 + 32x$

19. $6x - 9$

20. $48 + 24x$

21. $72 - 18x$

22. $25x + 14$

23. The rectangle shown below has a total area of $(4x + 36)$ square feet. Factor $4x + 36$.

4x	36

24. The Art Club receives $10 plus $2 for every sculpture they sell for a fundraiser. The expression $2x + 10$ represents the amount the Art Club receives if they sell x sculptures. Factor $2x + 10$.

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Lesson 1 Problem-Solving Practice

The Distributive Property

|	
1. Mr. Johannsen has a farm with 3 cows, 8 chickens, and some ducks. If the total number of farm animal legs is 40, how many ducks does Mr. Johannsen have on his farm?	**2.** Amy buys retired stamps from the U.S. Postal Service catalog. Last month, she bought 28 Candy Hearts stamps for $0.37 each. How much did Amy spend on stamps in all?
3. The table shows the cookie sales for Tina's troop. If each box costs $3.50, show two ways that Tina could find the troop's total cookie sales. 	**4.** Jonah drew two squares with the same dimensions. He then added 2 inches to the length of one square to make it a rectangle. He also added 2 inches to the width of the other square to make it a rectangle. Compare the perimeters of the two rectangles.
5. Daniel wants to buy a bicycle that costs $200.00. He saves the same amount each month from the money he earns mowing lawns. He also saves $15.00 of his monthly allowance. If x represents the amount he earns mowing lawns each month, write an expression to show Daniel's total savings after 8 months.	**6.** Refer to the information in Exercise 5. If Daniel earns $25 each month mowing lawns, how long will it take him to save enough money to buy his bicycle?

Table for Exercise 3:

Kind of Cookie	Number of Boxes
Mint	60 boxes
Vanilla sandwich	42 boxes
Peanut butter	56 boxes

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Lesson 2 Problem-Solving Practice

Simplifying Algebraic Expressions

1. There are 15 dogs, 22 cats, and 4 rabbits at a shelter. Each dog needs a collar, a bowl, and a toy. Each cat needs a collar and a bowl. In addition, one scratching post is needed for all of the cats. Each rabbit needs a bowl. Write an expression in simplest form to show the total number of collars c, bowls b, and toys t, that the animal shelter needs for its resident animals.

2. Rangley's father is making a walkway in the backyard. He will use large tiles for the walkway like the one shown below. Write an expression in simplified form for the perimeter of one tile.
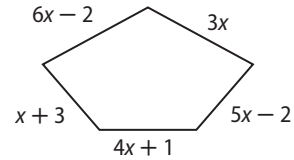
3. Mr. Raphael needs to buy notebooks for his children to start the school year. His son Manny needs some notebooks. His daughter Daphne needs twice as many as does Manny. His other daughter Ophelia says she needs one fewer than 3 times as many as Manny needs. If Mr. Raphael buys x notebooks for Manny, how many notebooks will he need to buy in all? Write an expression in simplest form.

4. Three families recently ordered jeans from a catalogue. The Rodriguez family ordered twice as many jeans as the Gomez family, and the Jimenes family ordered 4 times as many jeans as the Gomez family. Write an expression in simplest form to show how many jeans the families bought all together.

5. Three families went to an amusement park together. The number of people in each family is listed in the table.

| Family	Adults	Children	Seniors
McGraw	2	3	1
Churchill	1	2	2
Sanchez	2	1	1

Write an expression in simplest form to show how much it costs all adults, children, and seniors from the three families to attend the amusement park when a is the cost of an adult ticket, c is the cost of a child ticket, and s is the cost of a senior ticket.

6. Refer to the table in Exercise 5. The admission ticket cost was $40 for adults, $25 for children, and $27 for seniors. Write an expression to find how much the three families spent in all for admission tickets.
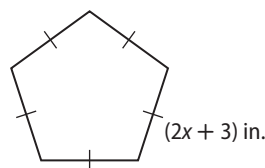
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Lesson 3 Problem-Solving Practice

Adding Linear Expressions

1. Write an expression in simplest form to show the perimeter of the large square below.
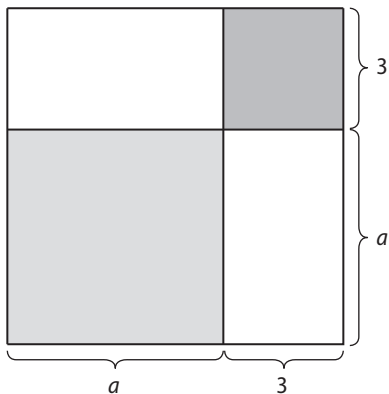
2. Heather was building a scale model of the Pentagon for her history class.

$(2x + 3)$ in.

a. Write and simplify an expression to represent the perimeter of Heather's scale model.

b. Find the perimeter of the model if $x = 2$.

3. A mailing supply company produces yellow mailing envelopes. The envelopes come in a variety of sizes, but the length is always 4 centimeters more than double the width. Write and simplify an expression to give the perimeter of any of the envelopes.

4. Find the simplest expression for the perimeter of the triangular roof truss.

$3a + 4$ $2a - 7$

$9a + 11$
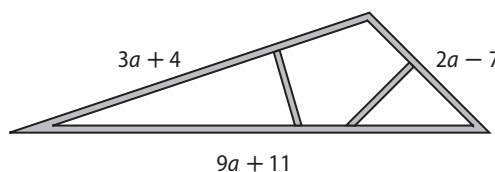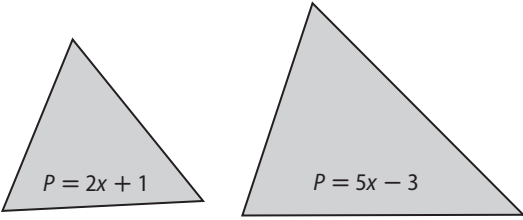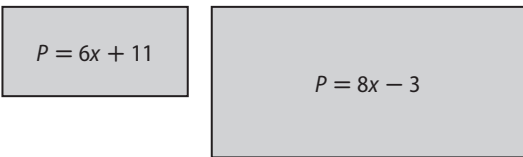
5. Kevin built a deck in his backyard. The length of the deck was $5x + 1$ units and the width of the deck was $4x - 1$ units. Write and simplify an expression to represent the perimeter of Kevin's deck.

6. The cost to produce x monitors is represented by the expression $350x + 1500$. The cost to produce x chairs is represented by the expression $175x - 50$. Write and simplify an expression to represent the cost of x monitors and chairs.

Lesson 4 Problem-Solving Practice

Subtracting Linear Expressions

1. The expression $5x + 10$ represents the amount of money in dollars the swim team earns by selling x school spirit shirts.

    a. If the team had to pay $2x + 3$ in expenses, write and simplify an expression to represent their profit.

    b. If the team sold 25 shirts, what was their profit?

2. Find the difference in the perimeters of the triangles shown.

$P = 2x + 1$ $P = 5x - 3$

3. The expression $6x + 4$ represents the number of miles Sarah ran in x hours. The expression $9x$ represents the number of miles Libby ran in the same number of hours.

    a. Write an expression to show how many more miles Libby ran than Sarah.

    b. If they each ran for 3 hours, how many more miles did Libby run?

4. Pete's Plumbing charges $25x + 50$ dollars for x hours of work. Plugged Pipes Plumbing charges $50x + 75$ dollars for the same number of hours.

    a. Write an expression to represent how much more Plugged Pipes Plumbing costs than Pete's Plumbing for x hours of work.

    b. If they each worked for 2 hours, how much more expensive is Plugged Pipes Plumbing?

5. The cost to rent a car from Lou's Garage is $50 + 0.10m$ dollars for m miles. The cost to rent a car at Jerry's Garage is $25 + 0.05m$ dollars for the same number of miles.

    a. Write an expression to represent how much more Lou's Garage is than Jerry's for m miles.

    b. If Ainsley wanted to rent a car and drive 100 miles, how much more expensive would Lou's Garage be?

6. What is the difference in the perimeters of the rectangles shown?

$P = 6x + 11$ $P = 8x - 3$

Math Accelerated • **Chapter 7** Algebraic Expressions

Lesson 5 Problem-Solving Practice

Factoring Linear Expressions

1. A sidewalk has an area that can be represented by the expression $(8x + 24)$ square feet. Factor the expression $8x + 24$.

2. The cost of renting a speedboat can be represented by the expression $50x + 250$, where x is the number of hours it is rented. Factor the expression $50x + 250$.

3. The rectangle shown below has an area of $(28x + 49)$ square inches. Factor the expression $28x + 49$.

4. Four friends went to a concert and paid $12 total for parking and x per ticket. The expression $4x + 12$ represents the total cost paid of all four friends. Factor $4x + 12$.

5. Marisa has $40 in her savings account and plans to save x dollars each month for 5 months. The expression $5x + 40$ represents the total amount in the account in dollars after 5 months. Factor the expression $5x + 40$.

6. A square picture frame has a perimeter of $(20x + 32)$ inches. What is the length of one side of the picture frame?

Unit 3 Extension – Powers and Roots (Chapter 4 in text)

Topics

Powers and Exponents

Negative Exponents

Multiplying and Dividing Monomials

Scientific Notation

Compute with Scientific Notation

Square Root and Cube Roots

Order of Operations

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HEY, WHO'S THE SQUARE?

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MATH CARTOON   - BY JOSIEP18

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Hey, you owe me $20.00.

Umm... no I don't.

Yes!!! You borrowed $10.00 from me last week, and another $10.00 yesterday.

But, two negatives make a positive!

That only applies to multiplying and dividing integers, not adding them!!!

Oh yeah.. bye!
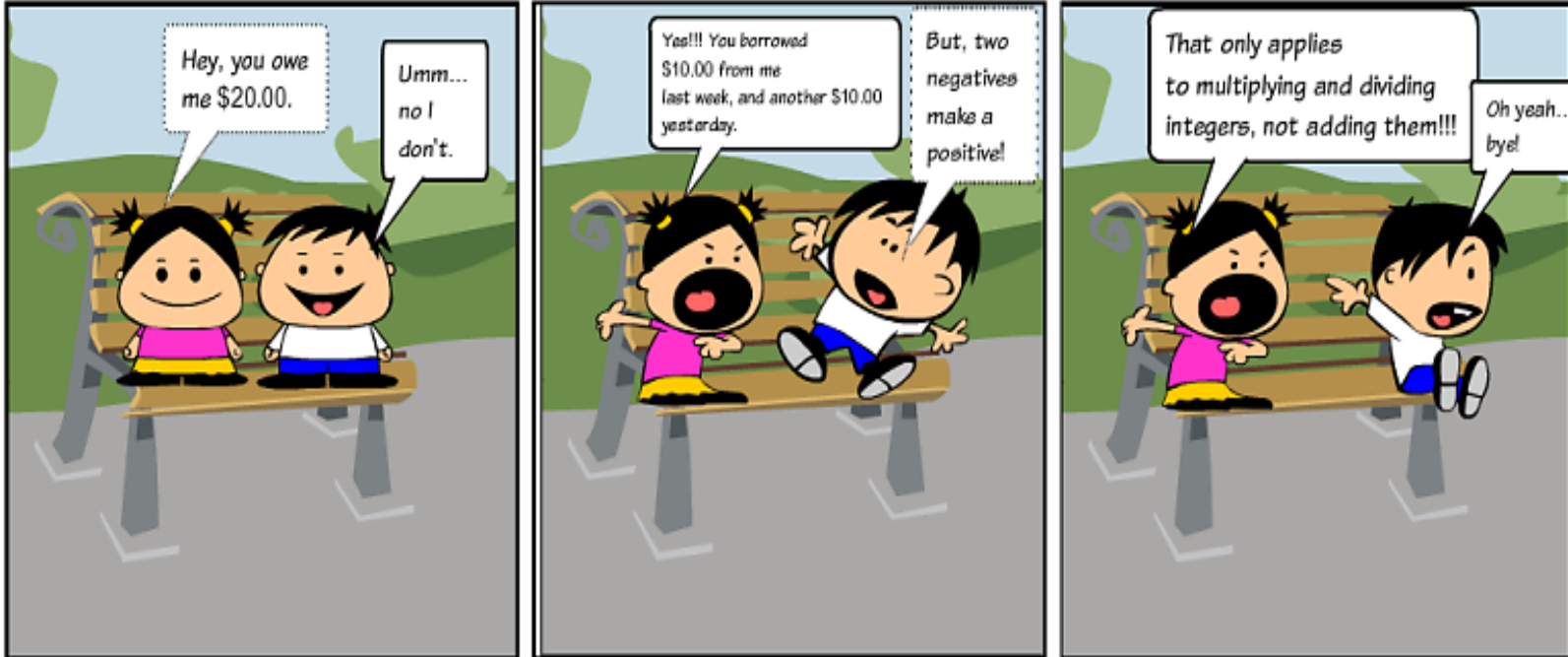
Name:_____

Team:_____ Math Period:_____ Teacher:_____

Lesson 1 Homework Practice

Powers and Exponents

Write each expression using exponents.

1. $11 \cdot 11 \cdot 11$

2. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

3. 5

4. $(-4)(-4)$

5. $a \cdot a \cdot a \cdot a$

6. $n \cdot n \cdot n \cdot n \cdot n$

7. $4 \cdot 4 \cdot 4$

8. $(b \cdot b)(b \cdot b)(b \cdot b)$

9. $(-v)(-v)(-v)(-v)$

10. $x \cdot x \cdot z \cdot z \cdot z$

11. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot t \cdot t$

12. $m \cdot m \cdot m \cdot n \cdot p \cdot p$

13. $(-6)(-6)(-6)(-d)(-d)(-d)(-d)$

14. $3 \cdot 3 \cdot 3 \cdot 3 \cdot p \cdot q \cdot q \cdot q$

Evaluate each expression if $x = 3$, $y = -2$, and $z = 4$.

15. y^z

16. x^z

17. y^x

18. 4^z

19. z^2

20. x^2

21. 9^x

22. $z^2 \cdot 2^2$

23. y^5

24. $z^2 - y^4$

25. $x^2 + y^2 + z^2$

26. $z^2 - x^2$

For Exercises 27 and 28, refer to the following information.

When examining a family tree, the branches are many. You are generation "now." One generation ago, your 2 parents were born. Two generations ago, your 4 grandparents were born.

27. How many great-grandparents were born three generations ago?

28. How many great-grandparents were born ten generations ago?

Lesson 2 Homework Practice

Negative Exponents

Write each expression using a positive exponent.

1. 7^{-8}

2. 10^{-6}

3. 23^{-1}

4. $(-5)^{-2}$

5. $(-18)^{-10}$

6. m^{-99}

7. $(-1)^{-12}$

8. c^{-6}

9. p^{-5}

10. g^{-17}

11. z^{-4}

12. t^{-2}

Write each fraction as an expression using a negative exponent other than -1.

13. $\dfrac{1}{2^{10}}$

14. $\dfrac{1}{29^3}$

15. $\dfrac{1}{4^4}$

16. $\dfrac{1}{39}$

17. $\dfrac{1}{81^7}$

18. $\dfrac{1}{m^4}$

19. $\dfrac{1}{x^3}$

20. $\dfrac{1}{a^2}$

21. $\dfrac{1}{49}$

22. $\dfrac{1}{8}$

23. $\dfrac{1}{144}$

24. $\dfrac{1}{169}$

Evaluate each expression if $x = 3$, $y = -2$, and $z = 4$.

25. x^{-4}

26. y^{-2}

27. y^{-5}

28. z^{-4}

29. 5^y

30. 10^y

31. $3z^{-1}$

32. z^y

33. $(xz)^{-2}$

34. Hair grows at a rate of $\dfrac{1}{64}$ inch per day. Write this number using negative exponents.

Math Accelerated • **Chapter 4** Powers and Roots

Lesson 3 Homework Practice

Multiplying and Dividing Monomials

Find each product or quotient. Express using positive exponents.

1. $4^2 \cdot 4^3$ **2.** $9^8 \cdot 9^6$

3. $7^4 \cdot 7^2$ **4.** $13^2 \cdot 13^4$

5. $(-8)^5(-8)^3$ **6.** $(-21)^9(-21)^5$

7. $t^9 \cdot t^3$ **8.** $h^4 \cdot h^{-13}$

9. $(m^6)(m^6)$ **10.** $(u^{11})(u^{10})$

11. $(-r)^{-7}(-r)^{20}$ **12.** $(-w)(-w)^9$

13. $4d^5 \cdot 8d^6$ **14.** $7j^{50} \cdot 6j^{50}$

15. $-5b^9 \cdot 6b^2$ **16.** $12 \cdot 12^2$

Find each quotient. Express using positive exponents.

17. $\dfrac{6^{11}}{6^3}$ **18.** $\dfrac{15^3}{15^2}$

19. $\dfrac{9^{-9}}{9^7}$ **20.** $\dfrac{18^4}{18^4}$

21. $\dfrac{(-7)^6}{(-7)^5}$ **22.** $\dfrac{95^{21}}{95^{18}}$

23. $\dfrac{v^{30}}{v^{20}}$ **24.** $\dfrac{n^{19}}{n^{11}}$

25. the product of five cubed and five to the fourth power

26. the quotient of eighteen to the ninth power and eighteen squared

27. the product of z cubed and z cubed

28. Decibels are units used to measure sound. The softest sound that can be heard is rated as 0 decibels (or a relative loudness of 1). Ordinary conversation is rated at about 60 decibels (or a relative loudness of 10^6). A rock concert is rated at about 120 decibels (or a relative loudness of 10^{12}). How many times greater is the relative loudness of a rock concert than the relative loudness of ordinary conversation?

Lesson 4 Homework Practice

Scientific Notation

Express each number in standard form.

1. 2.4×10^4

2. 9.0×10^3

3. 4.385×10^7

4. 1.03×10^8

5. 3.05×10^2

6. 5.11×10^{10}

7. 6.000032×10^6

8. 1.0×10^1

9. 8.75×10^5

10. 8.49×10^{-2}

11. 7.1×10^{-6}

12. 1.0×10^{-3}

13. 4.39×10^{-7}

14. 1.25×10^{-4}

Express each number in scientific notation.

15. 40,000

16. 16

17. 876,000,000

18. 4500

19. 151

20. 0.00037

21. 83,000,000

22. 919,100

23. 5,000,000,000,000

24. 0.13

25. 0.0000007

26. 0.0067

Order each set of numbers from least to greatest.

27. 7.35×10^4, 1.7×10^{-6}, 8.26×10^3, 9.3×10^{-2}

28. 0.00048, 4.37×10^{-4}, 4.02×10^{-3}, 0.04

29. Every minute, 840,000,000,000 drops of water flow over Niagara Falls. Write this number in scientific notation.

30. A scientist said the mass of a sample was 0.00000017 kg. Write this measurement in scientific notation.

Lesson 5 Homework Practice
Compute with Scientific Notation

Evaluate each expression. Express the result in scientific notation.

1. $(50{,}000)(4.2 \times 10^2)$

2. $(9.3 \times 10^5)(1.26 \times 10^{-2})$

3. $(2.9 \times 10^4)(1.5 \times 10^{-6})$

4. $(6.7 \times 10^{-1})(40{,}000)$

5. $(5.5 \times 10^3)(7 \times 10^3)$

6. $(4.3 \times 10^6)(2.1 \times 10^{-2})$

7. $\dfrac{7.6 \times 10^2}{3.8}$

8. $\dfrac{2.38 \times 10^{-4}}{1.7 \times 10^3}$

9. $\dfrac{1.44 \times 10^4}{6000}$

10. $\dfrac{6.03 \times 10^{14}}{9 \times 10^{-8}}$

11. $\dfrac{8.05 \times 10^3}{2.3 \times 10^2}$

12. $\dfrac{4.8 \times 10^{-1}}{5 \times 10^7}$

13. $(1.6 \times 10^2) + (2.29 \times 10^3)$

14. $(9.38 \times 10^1) + (5 \times 10^3)$

15. $(3.5 \times 10^7) - (1.7 \times 10^6)$

16. $(8.88 \times 10^{-1}) - (1.45 \times 10^{-2})$

17. $(63{,}000) + (3.1 \times 10^3)$

18. $(7.14 \times 10^4) + (12{,}000)$

19. $(6.35 \times 10^8) - (7.9 \times 10^8)$

20. $(4 \times 10^7) - (2 \times 10^5)$

21. $(8100) + (3.0 \times 10^3)$

22. $(1.06 \times 10^4) + (1.3 \times 10^4)$

23. $(5.4 \times 10^6) - (147{,}000)$

24. $(8.19 \times 10^2) - (7.15 \times 10^1)$

25. The distance from Earth to the Sun is 9.3×10^7 miles, and the distance from Earth to Mars is 4.6×10^7 miles. How many more miles is it from Earth to the Sun than Earth to Mars?

26. The area of the United States (including water) is approximately 3.8×10^6 sq. miles. The area of Alaska (including water) is approximately 6.6×10^5 sq. miles. About how many times the number of square miles of Alaska is the United States?

Lesson 6 Homework Practice

Square Roots and Cube Roots

Find each square root.

1. $\sqrt{100}$

2. $\sqrt{144}$

3. $\sqrt{-36}$

4. $\sqrt{121}$

5. $\sqrt{-148}$

6. $-\sqrt{4}$

7. $-\sqrt{9}$

8. $-\sqrt{49}$

9. $\sqrt{256}$

10. $\sqrt{529}$

11. $\sqrt{361}$

12. $-\sqrt{196}$

Then estimate each square root to the nearest integer.

13. $-\sqrt{2}$

14. $\sqrt{38}$

15. $\sqrt{249}$

16. $\sqrt{131}$

17. $\sqrt{7}$

18. $\sqrt{52}$

19. $\sqrt{168}$

20. $\sqrt{499}$

21. $-\sqrt{217}$

Find each cube root.

22. $\sqrt[3]{-125}$

23. $\sqrt[3]{343}$

24. $\sqrt[3]{8}$

25. $\sqrt[3]{3375}$

26. $\sqrt[3]{729}$

27. $\sqrt[3]{-1}$

28. $\sqrt[3]{-8000}$

29. $\sqrt[3]{512}$

30. $\sqrt[3]{-729}$

31. $\sqrt[3]{1331}$

32. $\sqrt[3]{-2744}$

33. $\sqrt[3]{64}$

Estimate each cube root to the nearest integer.

34. $\sqrt[3]{647}$

35. $\sqrt[3]{325}$

36. $\sqrt[3]{-805}$

37. $\sqrt[3]{1603}$

38. $\sqrt[3]{-3858}$

39. $\sqrt[3]{-4551}$

40. $\sqrt[3]{181}$

41. $\sqrt[3]{-1006}$

42. $\sqrt[3]{7852}$

43. A square tarpaulin covering a softball field has an area of 441 m². What is the length of one side of the tarpaulin?

44. The volume of a cube is 2744 m³. What is the length of an edge of the cube?

45. The highest observation deck on the Eiffel Tower in Paris is about 899 feet above the ground. About how far could a visitor see on a clear day? Use the equation $d = 1.22 \cdot \sqrt{h}$ where d is the distance to the horizon in miles and h is the person's distance from the ground in feet.

Math Accelerated • **Chapter 4** Powers and Roots

Lesson 7 - Order of Operations
Show all work on a separate piece of paper

Evaluate each expression

1. $n^3 - 5$ for $n = 4$

2. $4x^2 + y^3$ for $x = 5$ and $y = -2$

3. $m^p + q^2$ for $m = 5$, $p = 2$, and $q = 4$

4. $a^4 + 2(b - c^2)$ for $a = 2$, $b = 4$, and $c = -1$

5. $10 - (3 + 2)^0 + 2^{-1}$

6. $(6(6 \div 2 \cdot 9))^0$

7. $15 + (-6)^0 - 3^{-2}$

8. $6(8 - 2)^0 + 4^{-2}$

9. $2^{-2} + (-4)^{-1}$

10. $3(1 - 4)^{-2} + 9^{-1} + 12^0$

11. $9^0 + 64(3 + 5)^{-2}$

12. $\sqrt{32 + 17} + 3^2$

13. $\sqrt{100 - 19} - 3(5 - 2)$

14. $\sqrt{64 + 36} + 4 + 2 \cdot 8$

15. $4(4 + 5) \div 3(10 - 7) + \sqrt{73 - 48}$

16. $2\sqrt{64} + 10$

17. $7^0 + 36 - \sqrt{36}$

18. $\sqrt{100} - \sqrt{25} + \sqrt[3]{8}$

19. $\sqrt{121} + 16 + 2^{-1}$

20. $\sqrt{\dfrac{25}{4}} + \dfrac{1}{2}$

21. $\sqrt{\dfrac{100}{25}} + \dfrac{1}{3^{-1}}$

22. $\sqrt{\dfrac{196}{49}} - \sqrt[3]{64}$

23. $3(\sqrt{144} - 6)$