

SECTION P.1 EXERCISES

In Exercises 1–4, find the decimal form for the rational number. State whether it repeats or terminates.

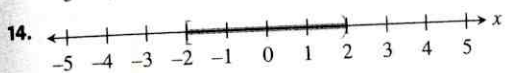
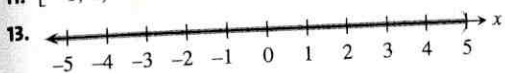
1. $-37/8$ 2. $15/99$ $0.\overline{15}$ (repeating)
 3. $-13/6$ $-2.\overline{16}$ (repeating) 4. $5/37$ $0.\overline{135}$ (repeating)

In Exercises 5–10, describe and graph the interval of real numbers.

5. $x \leq 2$ 6. $-2 \leq x < 5$
 7. $(-\infty, 7)$ 8. $[-3, 3]$
 9. x is negative
 10. x is greater than or equal to 2 and less than or equal to 6.

In Exercises 11–16, use an inequality to describe the interval of real numbers.

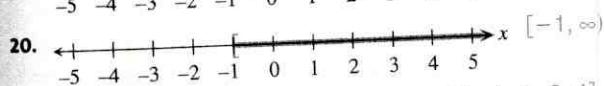
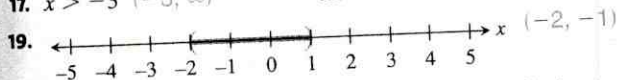
11. $[-1, 1)$ $-1 \leq x < 1$ 12. $(-\infty, 4]$



15. x is between -1 and 2 . $-1 < x < 2$
 16. x is greater than or equal to 5 . $5 \leq x < \infty$, or $x \geq 5$

In Exercises 17–22, use interval notation to describe the interval of real numbers.

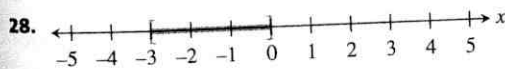
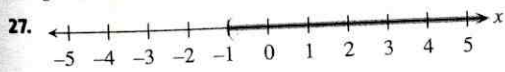
17. $x > -3$ $(-3, \infty)$ 18. $-7 < x < -2$ $(-7, -2)$



21. x is greater than -3 and less than or equal to 4 . $(-3, 4]$
 22. x is positive. $(0, \infty)$

In Exercises 23–28, use words to describe the interval of real numbers.

23. $4 < x \leq 9$ 24. $x \geq -1$
 25. $[-3, \infty)$ 26. $(-5, 7)$



In Exercises 29–32, convert to inequality notation. Find the endpoints and state whether the interval is bounded or unbounded and its type.

29. $(-3, 4)$ 30. $(-3, -1)$
 31. $(-\infty, 5)$ 32. $[-6, \infty)$

In Exercises 33–36, use both inequality and interval notation to describe the set of numbers. State the meaning of any variables you use.

33. **Writing to Learn** Bill is at least 29 years old.

34. **Writing to Learn** No item at Sarah's Variety Store costs more than \$2.00

35. **Writing to Learn** The price of a gallon of gasoline varies from \$1.099 to \$1.399.

36. **Writing to Learn** Salary raises at the State University of California at Chico will average between 2% and 6.5%

In Exercises 37–40, use the distributive property to write the factored form or the expanded form of the given expression.

37. $a(x^2 + b)$ $ax^2 + ab$ 38. $(y - z^3)c$ $yc - z^3c$
 39. $ax^2 + dx^2$ $(a + d)x^2$ 40. $a^3z + a^3w$ $a^3(z + w)$

In Exercises 41 and 42, find the additive inverse of the number.

41. $6 - \pi$ $\pi - 6$ 42. -7 7

In Exercises 43 and 44, identify the base of the exponential expression.

43. -5^2 5 44. $(-2)^7$ -2

45. **Group Activity** Discuss which algebraic property or properties are illustrated by the equation. Try to reach a consensus.

- (a) $(3x)y = 3(xy)$ (b) $a^2b = ba^2$
 (c) $a^2b + (-a^2b) = 0$ (d) $(x + 3)^2 + 0 = (x + 3)^2$
 (e) $a(x + y) = ax + ay$

46. **Group Activity** Discuss which algebraic property or properties are illustrated by the equation. Try to reach a consensus.

- (a) $(x + 2) \frac{1}{x + 2} = 1$ (b) $1 \cdot (x + y) = x + y$
 (c) $2(x - y) = 2x - 2y$
 (d) $2x + (y - z) = 2x + (y + (-z)) = (2x + y) + (-z) = (2x + y) - z$
 (e) $\frac{1}{a}(ab) = \left(\frac{1}{a}\right)b = 1 \cdot b = b$