Name _____ Class _____ Date _____

Practice 1-2

Exponents and Order of Operations

Simplify each expression.

1. $4 + 6(8)$

2. $\frac{4(8 - 2)}{3 + 9}$

3. $4 \times 3^2 + 2$

4. $40 \div 5(2)$

5. $2.7 + 3.6 \times 4.5$

6. $3[4(8 - 2) + 5]$

7. $4 + 3(15 - 2^3)$

8. $17 - [(3 + 2) \times 2]$

9. $6 \times (3 + 2) \div 15$

Evaluate each expression.

10. $\frac{a + 2b}{5}$ for $a = 1$ and $b = 2$

11. $\frac{5m + n}{5}$ for $m = 6$ and $n = 15$

12. $x + 3y^2$ for $x = 3.4$ and $y = 3$

13. $7a - 4(b + 2)$ for $a = 5$ and $b = 2$

Simplify each expression.

14. $\frac{100 - 15}{9 + 8}$

15. $\frac{2(3 + 4)}{7}$

16. $\frac{3(4 + 12)}{2(7 - 3)}$

17. $14 + 3 \times 4$

18. $8 + 3(4 + 3)$

19. $3 + 4[13 - 2(6 - 3)]$

20. $8(5 + 30 \div 5)$

21. $(3.4)(2.7) + 5$

22. $50 \div 2 + 15 \times 4$

23. $7(9 - 5)$

24. $2(3^2) - 3(2)$

25. $4 + 8 \div 2 + 6 \times 3$

26. $(7 + 8) \div (4 - 1)$

27. $5[2(8 + 5) - 15]$

28. $(6 + 8) \times (8 - 4)$

29. $12\left(\frac{6 + 30}{9 - 3}\right)$

30. $14 + 6 \times 2^3 - 8 \div 2^2$

31. $\frac{7(14) - 3(6)}{2}$

32. $14 \div [3(8 - 2) - 11]$

33. $3\left(\frac{9 + 13}{6}\right)$

34. $\frac{4(8 - 3)}{3 + 2}$

35. $5 + 4^2 \times 8 - 2^3 \div 2^2$

36. $4^2 + 5^2(8 - 3)$

37. $5(3^2 + 2) - 2(6^2 - 5^2)$

Evaluate each expression for $a = 2$ and $b = 6$.

38. $2(7a - b)$

39. $(a^3 + b^2) \div a$

40. $3b \div (2a - 1) + b$

41. $\frac{5a + 2}{b}$

42. $\frac{3(b - 2)}{4(a + 1)}$

43. $9b + a^4 \div 8$

Use the expression $r + 0.12m$ to calculate the cost of renting a car. The basic rate is r. The number of miles driven is m.

44. The basic rate is \$15.95. The car is driven 150 mi.

45. The basic rate is \$32.50. The car is driven 257 mi.

Evaluate each expression for $s = 3$ and $t = 9$.

46. $8(4s - t)$

47. $(2t - 3s) \div 4$

48. $t^2 - s^4$

49. $s(3t + 6)$

50. $\frac{5s^2}{t}$

51. $\frac{2t^2}{s^3}$

Name _____ Class _____ Date _____

Practice 1-3

Exploring Real Numbers

Name the set(s) of numbers to which each number belongs.

1. -0.002 **2.** $12\frac{1}{2}$ **3.** 8 **4.** 5π

5. $\sqrt{7}$ **6.** -22 **7.** -3.4 **8.** $\sqrt{36}$

Is each statement *true* or *false*? If the statement is false, give a counterexample.

9. Every whole number is an integer.

10. Every integer is a whole number.

11. Every rational number is a real number.

12. Every multiple of 7 is odd.

Use <, =, or > to compare.

13. $-10.98 \blacksquare -10.99$ **14.** $-\frac{1}{3} \blacksquare -0.3$ **15.** $-\frac{11}{5} \blacksquare -\frac{4}{5}$

16. $-\frac{1}{2} \blacksquare -\frac{5}{10}$ **17.** $-\frac{3}{8} \blacksquare -\frac{7}{16}$ **18.** $\frac{3}{4} \blacksquare \frac{13}{16}$

Order the numbers in each group from least to greatest.

19. $-\frac{8}{9}, -\frac{7}{8}, -\frac{22}{25}$ **20.** $-3\frac{4}{9}, -3.45, -3\frac{12}{25}$ **21.** $-\frac{1}{4}, -\frac{1}{5}, -\frac{1}{3}$

22. $-1.7, -1\frac{3}{4}, -1\frac{7}{9}$ **23.** $-\frac{3}{4}, -\frac{7}{8}, -\frac{2}{3}$ **24.** $2\frac{3}{4}, 2\frac{5}{8}, 2.7$

Determine which set of numbers is most reasonable for each situation.

25. the number of dolphins in the ocean

26. the height of a basketball player

27. the number of pets you have

28. the circumference of a compact disk

Find each absolute value.

29. $\left|\frac{3}{10}\right|$ **30.** $|-327|$ **31.** $|-3.46|$ **32.** $\left|-\frac{1}{2}\right|$

33. Name the sets(s) of numbers to which each number in the table belongs. Choose among: whole numbers, integers, rational numbers, irrational numbers, and real numbers.

Type of Account	Principal	Rate	Time (years)	Interest
Checking	\$154.23	0.0375	$\frac{30}{365}$	\$.48
Savings	\$8000	0.055	$3\frac{1}{2}$	\$1540