

Cumulative Review

For use after Chapters 1–8

Evaluate the expression when $b = -4$. (1.3)

1. $7 - b + b^2$

2. $b(6 - b^3)$

3. $\frac{b - 4}{-b}$

4. $-4.5(b - 2b)$

5. $-\frac{b}{8}$

6. $b(5 - b) \div 10b$

Find the difference. (2.3)

7. $12(2.1) - 10$

8. $-6(9 - 6)$

9. $-\frac{1}{25}(90 - 5)(-1)$

10. $-8(6.3 - 1)$

11. $-10(4 - 4) + 5^2$

12. $(-6 + 2)3 - 3^2$

Solve the equation. (3.4)

13. $5x + 3(x + 4) = 28$

14. $66 = -\frac{6}{5}(x + 3)$

15. $-28 = 2(x + 3) - 5(x - 1)$

16. $6 = \frac{3}{2}x + \frac{1}{2}(x - 4)$

Find the slope of the line passing through the given points. (4.4)

17. $(2, 3), (4, -3)$

18. $(7, 0), (2, -2)$

19. $(-9, -5), (9, 8)$

20. $(-\frac{5}{6}, \frac{8}{3}), (1, 0)$

21. $(0, -1), (-1, 0)$

22. $(7, -2), (-7, 2)$

Find the constant of variation and the slope of the direct variation model. (4.5)

23. $y = 7x$

24. $y = \frac{6}{5}x$

25. $y = 0.2x$

26. $y = -x$

27. $y = x - 8$

28. $y - 0.23x = 0$

Find the x -intercept and the y -intercept of the graph of the equation. (4.3)

29. $6x - 2y = -7$

30. $\frac{1}{4}x = 1 - y$

31. $-4x + 5y = -8$

32. $-y = -12 + 2x$

33. $0.2x - 7 = 12y$

34. $-\frac{8}{9}x - \frac{19}{3}y = -\frac{2}{3}$

Write an equation of the line in slope-intercept form. (5.1)35. The slope is 7; the y -intercept is -6 .36. The slope is 1; the y -intercept is $\frac{6}{7}$.37. The slope is $\frac{3}{4}$; the y -intercept is -2 .**Find the mean, median, and mode of the collection of numbers. (6.6)**

38. 2, 3, 2, 5, 1, 1, 5, 4, 10, 2

39. 6, 15, 9, 6, 52, 32, 8, 20, 26

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Use substitution to solve the linear system. (7.2)

40. $2b = 16$

$a = b + 5$

42. $x + \frac{3}{4}y = \frac{3}{4}$

$2y = 4x + 16$

41. $8x + 9y = 111$

$y = x + 1$

43. $0.6x + 0.2y = 0.8$

$-x + y = 15$

Simplify, if possible. Write your answer as a power. (8.1)

44. $[(-3xy)^2]^4$

45. $x^2(x - 8)^3$

46. $(-2a)^4 \cdot (-6a)^3$

47. $(-ab)(a^5b^9)^4$

48. $(5x^3y)^2 \cdot xy$

49. $(-10xy^4)^2(-4x^5y)$

Rewrite the expression with positive exponents. (8.2)

50. $(a^{-9}b^{-9})(a^3b^{-8})$

51. $-4^2 \cdot 6^{-1} \div 3^{-3}$

52. $\frac{1}{(8xy^{-6})^{-1}}$

53. $(-rs)^{-6} \left(\frac{45}{9r^8s^6} \right)$

54. $(-10a^3b^{-2})^0$

55. $\frac{rs^{11}}{r^{-9}} r^{-3}s^{-9}$

Simplify the expression. The simplified expression should have no negative exponents. (8.3)

56. $y \left(\frac{x^{-3}}{y^{-5}} \right)^{-1} \cdot x \left(\frac{y^3}{x^{-3}} \right)^{-3}$

57. $x^6 \cdot \frac{6}{(xy)^{-3}}$

58. $\frac{mn^{-9}m^{30}}{m^0m^{23}}$

59. $\left(\frac{18x^{-8}}{45x^{-9}} \right)$

60. $\frac{64r^3s^{-12}}{12r^{-9}s^{-12}} \cdot \frac{120r^6}{24s^{-18}}$

61. $\frac{88}{11xy} \cdot \frac{x}{(xy)^{-6}}$

Rewrite in scientific notation. (8.4)

62. 0.025

63. 93.5

64. 15

65. 99,002,356

66. 632.02

67. 0.0004631

Find the balance after 10 years of an account that pays 5.7% interest compounded yearly given the following investment amounts. (8.5)

68. \$389

69. \$675

70. \$6,004

Classify the model as *exponential growth* or *exponential decay*. Identify the growth or decay factor and the percent increase or decrease per time period. (8.6)

71. $y = 34(0.23)^t$

72. $y = 63(0.002)^t$

73. $21\left(\frac{12}{11}\right)^t$

74. $y = 237(0.56)^t$

75. $y = 5\left(\frac{8}{15}\right)^t$

76. $y = 8(1.11)^t$