

Introductory Algebra Test for Internet

1. Find the LCM of 16, 18 and 24.

- a) 144 b) 432 c) 288 d) 72

2. Add and simplify: $\frac{2}{3} + \frac{5}{8}$.

- a) $\frac{7}{11}$ b) $\frac{5}{12}$ c) $\frac{31}{24}$ d) $\frac{7}{24}$

3. Subtract: $19 - 0.025$.

- a) 19.025 b) 18.975 c) 18.75 d) 4.75

4. Multiply: 0.053×19.261 .

- a) 103.9913 b) 19.314 c) 1.020833 d) 0.67256

5. Round 29.1708 to the nearest hundredth.

- a) 29.171 b) 29.2 c) 29.17 d) 29.1708

6. Evaluate: $(2.4)^2$.

- a) 5.76 b) 17.64 c) 4.8 d) 4.4

7. Calculate: $530 \times 6.5 \div 1.3$.

- a) 3446.3 b) 4478.5 c) 106 d) 2650

8. Evaluate $\frac{a + 2b}{3}$ when $a = 7$ and $b = 4$.

- a) $\frac{11}{3}$ b) 3 c) $\frac{23}{3}$ d) 5

9. Add: $-9 + 4 + (-7) + 3$.

- a) -1 b) 15 c) 8 d) -9

10. Subtract: $-7.9 - 5.6$.

- a) -13.5 b) -2.3 c) 13.5 d) 2.3

11. Multiply: $-\frac{5}{8} \times \left(-\frac{4}{5}\right)$.

- a) -2 b) $\frac{1}{2}$ c) $\frac{4}{9}$ d) $-\frac{2}{3}$

12. Divide $-\frac{2}{3} \div \frac{4}{9}$.

- a) $-\frac{2}{3}$ b) $-\frac{27}{8}$ c) $-\frac{3}{2}$ d) $\frac{8}{27}$

13. Simplify: $9x - (5x - 3)$.

- a) $4x + 3$ b) $14x + 3$ c) $14x - 3$ d) $4x - 3$

14. Simplify: $7^2 - 4[6 - (-3 + 5)4]$.

- a) 57 b) 21 c) 32 d) -7

15. Solve: $9y + 3 = 5y - 9$.

- a) $-\frac{6}{7}$ b) 3 c) -3 d) $-\frac{3}{2}$

16. Solve: $8x + 9 > 6x - 1$.

- a) $\{x|x < 3\}$ b) $\left\{x \mid x > -\frac{5}{7}\right\}$ c) $\{x|x > -2\}$ d) $\{x|x > -5\}$

17. Solve: $2 - 6x \leq 23 + x$.

- a) $\{x|x \geq 3\}$ b) $\{x|x \geq -3\}$ c) $\{x|x \leq 3\}$ d) $\left\{x \mid x > -\frac{25}{7}\right\}$

18. Solve $A = 2(a + b - 5)$, for b .

- a) $b = 2A + 2a - 10$ b) $b = \frac{A - 2a + 10}{2}$ c) $b = \frac{A}{2} - 2a - 5$ d) $b = A - 4a - 5$

19. The sum of three consecutive odd integers is 393. Find the smallest integer.

- a) 129 b) 215 c) 196 d) 133

20. After a 32% price reduction, a CD player is on sale at \$81.60. What was the original price?

- a) \$55.49 b) \$255 c) \$109.50 d) \$120

21. Your test grades are 83, 87, 81, and 75. What is the lowest score you can get on the next test and still have an average of at least 80?

- a) 75 b) 74 c) 78 d) 80

22. Simplify: $(-3y^4)^3$.

- a) $-9y^{12}$ b) $-3y^7$ c) $-27y^{12}$ d) $-27y^7$

23. Multiply and express the result in scientific notation: $(2.3 \times 10^{-5})(6.1 \times 10^{-3})$.

- a) 1.403×10^{-7} b) 14.03×10^{15} c) 14.03×10^{-2} d) 1.403×10^{-9}

24. Evaluate the polynomial $x^4 - 2x + 3$, when $x = -3$.

- a) 90 b) -3 c) 78 d) -12

25. Add: $(3x^4 - 2x^3 + x^2 - 9) + (x^3 - 5x^2 + x - 6)$.

- a) $4x^4 - 7x^3 + 2x^2 - 15$ b) $3x^4 - x^3 - 4x^2 + x - 15$

- c) $3x^4 + 3x^3 + x^2 + x - 15$ d) $3x^4 - x^3 + 6x^2 - x - 3$

26. Subtract: $(6x^2y^2 - 3xy^2 + 2y^3) - (-x^2y^2 + xy - 5y^3)$.

- a) $5x^2y^2 - 4x^2y^2 - 3y^3$ b) $5x^2y^2 - 3xy^2 + xy - 3y^3$

- c) $7x^2y^2 - 2xy^2 + 7y^3$ d) $7x^2y^2 - 3xy^2 - xy + 7y^3$

27. Multiply: $(8x - 5)(8x + 5)$.

- a) $16x^2 + 40x$ b) $64x^2 - 80x - 25$ c) $64x^2 - 25$ d) $16x^2 - 10$

28. Multiply: $(3x + 5)^2$.

- a) $9x^2 + 15$ b) $9x^2 + 25$ c) $9x^2 + 30x + 25$ d) $6x^2 + 30x + 25$

29. Find one of the factors of $x^2 + 64 - 16x$.

- a) $x + 4$ b) $x - 2$ c) $x + 8$ d) $x - 8$

30. Find one of the factors of $x^3 + 4x^2 - 2x - 8$.

- a) $x - 2$ b) $x - 4$ c) $x + 4$ d) $x + 8$

31. Find one of the factors of $36x^2 - 25$.

- a) $3x - 5$ b) $12x + 5$ c) $9x - 5$ d) $6x + 5$

32. Find one of the factors of $108a^3 + 72a^2 + 12a$.

- a) $3a + 1$ b) a^2 c) $4a + 1$ d) $6a + 1$

33. Solve: $x^2 + 3x - 40 = 0$.

- a) -10, 4 b) -8, 5 c) -4, 10 d) -5, 8

34. Solve: $x(x - 8) = 9$.

- a) -1, 9 b) -4, 5 c) -9, 1 d) -8, 2

35. The base of a triangle is 7m more than the height. The area is $60m^2$. Find the height.

- a) 4m b) 16m c) 8m d) 6m

36. Divide and simplify: $\frac{4x^2 - 49}{6x^2 - 30x} \div \frac{2x^2 + 9x + 7}{3x^2 - 13x - 10}$.

- a) $\frac{(2x + 7)}{6x}$ b) $\frac{(3x + 2)}{6x(x - 1)}$ c) $\frac{(2x + 7)(x - 5)}{6x}$ d) $\frac{(2x - 7)(3x + 2)}{6x(x + 1)}$

37. Add and Simplify: $\frac{x + 2}{x - 4} + \frac{x - 1}{4 - x}$.

- a) $\frac{2x - 1}{x - 4}$ b) $\frac{3}{x - 4}$ c) $\frac{x + 1}{x - 4}$ d) $\frac{2x}{4 - x}$

38. Simplify: $\frac{3}{x + 4} + \frac{5}{x^2 - 16} - \frac{2}{x^2 - 8x + 16}$.

- a) $\frac{3x - 17}{(x + 4)(x - 4)^2}$ b) $\frac{6}{(x + 4)(x - 4)^2}$ c) $\frac{3x^2 - 21x + 20}{(x + 4)(x - 4)^2}$ d) $\frac{6x - 40}{(x + 4)(x - 4)^2}$

39. Simplify: $\frac{\frac{1}{3} - \frac{1}{x}}{\frac{3}{3 - x}}$.

- a) $-\frac{1}{x}$ b) $\frac{3x}{x - 3}$ c) $\frac{x - 3}{x}$ d) $\frac{x}{3 - x}$

40. Solve: $\frac{7}{y} - \frac{1}{3} = \frac{1}{4}$.

- a) 12 b) 7 c) 1 d) 5

41. A sample of 285 lightbulbs contained 15 defective. How many defective would you expect in a sample of 456 lightbulbs?

- a) 35 b) 86 c) 64 d) 24

42. Solve: $C = \frac{A - B}{AB}$, for B .

- a) $B = CA + 1$ b) $B = CA + \frac{1}{A}$ c) $B = \frac{1}{C} + A$ d) $B = \frac{A}{CA + 1}$

43. In which quadrant is the point $(-5, -9)$ located?

- a) I b) IV c) II d) III

44. Find the slope of the line containing the points $(2, 8)$ and $(-3, -1)$.

- a) $-\frac{5}{9}$ b) $\frac{1}{7}$ c) $\frac{9}{5}$ d) -7

45. Find an equation of a line that contains $(3, -4)$ and $(2, 5)$.

- a) $y = -9x + 17$ b) $y = 2x + 1$ c) $y = -9x + 23$ d) $y = -3x - 5$

46. Given the line $3x - 2y = 9$, which of the following lines is parallel to it?

- a) $2y - 3x = 2$ b) $3x + 2y = 5$ c) $x - 2y = 3$ d) $3y + 2x = 12$

47. Given the line $3x - 2y = 9$, which of the following lines is perpendicular to it?

- a) $2y - 3x = 2$ b) $3y = 12 - 2x$ c) $3y - 2x = 5$ d) $2y + 3x = 9$

48. A person's paycheck P varies directly as the number H of hours worked. For working 6hr, the pay is \$28.40. Find the pay for 38 hr of work.

- a) \$240 b) \$270.75 c) \$190 d) \$179.87

49. The current I in an electrical conductor varies inversely as the resistance R of the conductor. The current is 5 amperes when the resistance is 680 ohms. What is the current when the resistance is 425 ohms?

- a) 3.125 amperes b) 11 amperes c) 8 amperes d) 6.5 amperes

50. Identify the ordered pair that is a solution of $x = y - 6$, $3x - 2y = -3$.

- a) $(15, 21)$ b) $(-1, 0)$ c) $(9, 15)$ d) $(5, 9)$

51. Use the elimination method to solve for y : $x + 2y = 8$, $5x + 3y = 5$.

- a) -2 b) 4 c) -3 d) 5

52. Find x when solving $\frac{3}{5}x + \frac{1}{3}y = 10$, $\frac{1}{2}x - \frac{1}{4}y = 2$.

- a) 12 b) 10 c) 20 d) 15

53. The perimeter of a rectangle is 70cm. The width is 7cm less than the length. Find the length.

- a) 21cm b) 14cm c) 28cm d) 35cm

54. A chemist has one solution that is 40% saline and another that is 70% saline. He wants to make 150L of a solution that is 50% saline. How much of the 70% solution must be used?

- a) 100L b) 75L c) 50L d) 60L

55. Two cars leave town at the same time in the same direction. One car travels 52 mph and the other 58 mph. In how many hours will they be 27 miles apart?

- a) 3.5 b) 4 c) 5 d) 4.5

56. An airplane flew for 5 hr with a 20-mph tail wind. The return trip against the same wind took 6 hr. Find the speed of the plane in still air.

- a) 220 mph b) 260 mph c) 240 mph d) 180 mph

57. Approximate $\sqrt{53}$ to three decimal places.

- a) 5.916 b) 7.280 c) 2.436 d) 7.416

58. Multiply and simplify: $\sqrt{5a^2b}\sqrt{10a^3b^4}$.

- a) $25ab\sqrt{2ab}$ b) $5a^2b^2\sqrt{ab}$ c) $5a^2b^2\sqrt{2ab}$ d) $25ab\sqrt{ab}$

59. Simplify: $\sqrt{\frac{27}{75}}$.

- a) $\frac{9}{25}$ b) $\frac{5}{8}$ c) $\frac{3}{5}$ d) $\frac{3}{4}$

60. Subtract: $5\sqrt{28} - 2\sqrt{63}$.

- a) $4\sqrt{7}$ b) $3\sqrt{35}$ c) $3\sqrt{7}$ d) $-3\sqrt{35}$

61. Simplify: $(\sqrt{5} + 2)^2$.

- a) 9 b) $9 + 2\sqrt{5}$ c) $5 + 4\sqrt{5}$ d) $9 + 4\sqrt{5}$

62. In a right triangle with $a = 7$ and $b = 4$, find c to three decimal places.

- a) 3.317 b) 8.062 c) 4.690 d) 5.745

63. Solve: $\sqrt{4x + 1} = x - 1$.

- a) 0 b) 5 c) 3 d) 6

64. Find the smaller solution of $27 = b^2 - 6b$.

- a) -9 b) 3 c) -3 d) 9

65. Approximate the solutions of $x^2 + 10x + 8 = 0$ to the nearest tenth.

- a) -9.1, -0.9 b) -10.8, 0.8 c) -18.3, -1.7 d) -8.3, -0.3

66. Solve: $x + \frac{8}{x} = 6$.

- a) -4, 2 b) 2,4 c) -6, -2 d) 2,8

67. Find the larger solution of $\frac{6}{x+1} + \frac{3}{x-2} = 2$.

- a) $\frac{1}{2}$ b) 8 c) 4 d) 5

68. Find the vertex of the graph of $y = 4x^2 + 8x - 5$.

- a) (4, 93) b) (1, 7) c) (-1, -9) d) (-2, -5)

69. The width of a rectangle is 18m less than the length. The area is $319m^2$. Find the length.

- a) 29m b) 39m c) 7m d) 21m

70. Find the positive x -intercept of $y = x^2 + 2x - 63$.

- a) (7, 0) b) (0, 7) c) (0, 9) d) (9, 0)

Answers for Introductory Algebra

1.a 2.c 3.b 4.c 5.c 6.a 7.d 8.d 9.d 10.a 11.b 12.c 13.a 14.a 15.c 16.d 17.b
18.b 19.a 20.d 21.b 22.c 23.a 24.a 25.b 26.d 27.c 28.c 29.d 30.c 31.d
32.a 33.b 34.a 35.c 36.d 37.b 38.c 39.a 40.a 41.d 42.d 43.d 44.c 45.c
46.a 47.b 48.d 49.c 50.c 51.d 52.b 53.a 54.c 55.d 56.a 57.b 58.c 59.c
60.a 61.d 62.b 63.d 64.c 65.a 66.b 67.d 68.c 69.a 70.a