

Pre-Algebra 1st Semester Exam Review

Find the next term in each list.

1. 9, 13, 17, 21, 25, . . .

2. 88, 86, 84, 82, 80, . . .

Find the value of each expression.

3. $5 + 2 \cdot 8$

4. $100 \div (16 + 9) \cdot 6$

Evaluate each expression if $x = 12$, $y = 20$, and $z = 4$.

5. $yz + x$

6. $\frac{5x}{3z}$

Find the solution of each equation from the list given.

7. $w + 16 = 31$; 13, 15, 17

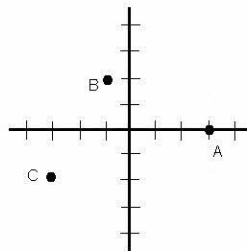
8. $s - 14 = 2$; 12, 14, 16

Write the ordered pair that names each point.

9. A

10. B

11. C



Determine whether a scatter plot of the data for the following might show a positive, negative, or no relationship.

12. the size of a family and the weekly grocery bill

13. time spent playing video games and time spent on outdoor activity

Order the integers in each set from least to greatest.

14. $\{-14, -6, -22, 0\}$

Evaluate each expression.

15. $|-7|$

16. $|14|$

Find each sum.

17. $-19 + (-7)$

18. $-34 + 17$

Find each difference.

19. $-26 - (-30)$

20. $15 - (-40)$

Evaluate each expression if $a = -11$, $b = 8$, and $c = -6$.

21. $b - c + a$

Find each product.

22. $4(17)$

23. $-5(-7)$

Find each quotient.

24. $-44 \div 4$

25. $-49 \div -7$

Find the average (mean) of each group of numbers.

26. 23, 20, 27, 18

27. -20, -15, -12, -1, 1, 12, 15, 20

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

28. $7(x + 11)$

29. $-8(x - 2)$

Simplify each expression.

30. $x - 3x + 2 - x + 1$

31. $-8x + 6 + 5x - 3$

Solve each equation.

32. $x + 6 = -5$

33. $x - 14 = -23$

34. $\frac{x}{4} = -12$

35. $-15x = -90$

36. $\frac{x}{3} - 4 = 2$

37. $6x - 125 = 1$

Translate each sentence into an equation. Then find each number.

38. Eight less than 7 times a number is -29 .

39. The difference between three times a number and 11 is 10.

Write an expression that describes each sequence. Then find the indicated term.

40. 20, 33, 46, 59, ...; 17th term

41. 101, 103, 105, 107, ...; 30th term

Write each expression using exponents.

42. $11 \cdot 11 \cdot 11$

43. $x \cdot x \cdot x \cdot x \cdot x$

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

44. $x^2 + z^2$

45. y^3

Determine whether each number is prime or composite.

46. 11

47. 63

48. 75

Write the prime factorization of each number. Use exponents for repeated factors.

49. 33

50. 24

Find the GCF of each set of numbers or monomials.

51. 9, 36

52. 29, 58

53. 90, 480

Factor each expression.

54. $10x + 40$

55. $8x - 56$

Write each fraction in simplest form.

56. $\frac{6}{10}$

57. $\frac{32}{136}$

58. $\frac{x^4}{x^6}$

59. $\frac{x^7}{x^3}$

Find each product or quotient. Express your answer using exponents.

60. $7^4 \cdot 7^2$

61. $4x^5 \cdot 8x^6$

62. $\frac{x^{19}}{x^{11}}$

Write each expression using a positive exponent.

63. 7^{-8}

64. $(-3)^{-5}$

Write each fraction as an expression using a negative exponent.

65. $\frac{1}{2^{10}}$

66. $\frac{1}{x^4}$

Express each number in standard form.

67. 2.4×10^4

68. 9.0×10^{-3}

69. 4.385×10^7

Express each number in scientific notation.

70. 40,000

71. 876,000,000

72. 0.0067

Write each fraction or mixed number as a decimal. Use a bar to show a repeating decimal.

73. $\frac{3}{5}$

74. $\frac{8}{11}$

75. $-\frac{7}{9}$

Write each number as a fraction.

76. 29

77. $3\frac{7}{8}$

78. $-7\frac{2}{15}$

Write each decimal as a fraction or mixed number in simplest form.

79. 0.32

80. 17.26

81. $6\bar{5}$

Find each product. Write in simplest form.

82. $\frac{3}{4} \cdot \frac{2}{3}$

83. $-\frac{3}{4} \cdot \frac{10}{27}$

84. $-2\frac{14}{25} \cdot 4\frac{3}{8}$

Find each quotient. Write in simplest form.

85. $\frac{1}{2} \div \frac{1}{10}$

86. $8\frac{4}{9} \div \left(-2\frac{1}{9}\right)$

87. $\frac{ab}{8} \div \frac{b}{a}$

Find each sum or difference. Write in simplest form.

88. $\frac{5}{7} + \frac{1}{7}$

89. $22\frac{3}{8} - 18\frac{5}{8}$

90. $\frac{x}{6} + \frac{4x}{6}$

Find the least common multiple (LCM) of each pair of numbers or monomials.

91. 30, 45

92. 10, 12

93. $15q, 3q^2t$

Find the least common denominator (LCD) of each pair of fractions.

94. $\frac{1}{2}, \frac{2}{3}$

95. $\frac{5}{12}, \frac{8}{15}$

Find each sum or difference. Write in simplest form.

96. $\frac{9}{10} + \frac{1}{2}$

97. $-16\frac{2}{7} - 3\frac{20}{21}$

98. $\frac{7}{10} + \frac{14}{100}$

Solve each equation.

99. $y + 6.1 = 19.5$

100. $y + 2\frac{2}{5} = 5\frac{4}{15}$

101. $\frac{4}{5}x = \frac{16}{25}$

Find the mean, median, and mode for each set of data. If necessary, round to the nearest tenth.

102. 16, 18, 15, 16, 21, 16

103. 17, 16, 13, 17, 17, 10, 10, 13, 10

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|------------------------|-----------------------------|---------------------|---------------------------|
| 1. 29 | 23. 35 | 42. 11^3 | 63. $\frac{1}{7^8}$ |
| 2. 78 | 24. -11 | 43. x^5 | 64. $\frac{1}{(-3)^{-5}}$ |
| 3. 21 | 25. 7 | 44. 25 | 65. 2^{-10} |
| 4. 24 | 26. 22 | 45. -8 | 66. x^{-4} |
| 5. 92 | 27. 0 | 46. P | 67. 24,000 |
| 6. 5 | 28. $7x + 77$ | 47. C | 68. 0.009 |
| 7. 15 | 29. $-8x + 16$ | 48. C | 69. 43,850,000 |
| 8. 16 | 30. $-3x + 3$ | 49. $3 \cdot 11$ | 70. 4×10^4 |
| 9. (3, 0) | 31. $-3x + 3$ | 50. $2^3 \cdot 3$ | 71. 8.76×10^8 |
| 10. (-1, 2) | 32. -11 | 51. 9 | 72. 6.7×10^{-3} |
| 11. (-3, -2) | 33. -9 | 52. 29 | 73. 0.6 |
| 12. positive | 34. -48 | 53. 30 | 74. $0.\overline{72}$ |
| 13. negative | 35. 6 | 54. $10(x + 4)$ | 75. $-0.\overline{7}$ |
| 14. -22, -14,
-6, 0 | 36. 18 | 55. $8(x - 7)$ | 76. $\frac{29}{1}$ |
| 15. 7 | 37. 21 | 56. $\frac{3}{5}$ | 77. $\frac{31}{8}$ |
| 16. 14 | 38. $7n - 8 =$
$-29; -3$ | 57. $\frac{4}{17}$ | 78. $-\frac{107}{15}$ |
| 17. -26 | 39. $3n - 11 =$
$10; 7$ | 58. $\frac{1}{x^2}$ | 79. $\frac{8}{25}$ |
| 18. -17 | 40. $13n + 7;$
221 | 59. x^4 | 80. $17\frac{13}{50}$ |
| 19. 4 | 41. $2n + 99;$
159 | 60. 7^6 | |
| 20. 55 | | 61. $32x^{11}$ | |
| 21. 3 | | 62. x^8 | |
| 22. 68 | | | |

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81. $6\frac{5}{9}$

98. $\frac{21}{25}$

82. $\frac{1}{2}$

99. 13.4

83. $-\frac{5}{18}$

100. $2\frac{13}{15}$

84. $-11\frac{1}{5}$

101. $\frac{4}{5}$

85. 5

102. 17, 16, 16

86. 4

103. 13.7, 13,

87. $\frac{a^2}{8}$

10 and 17

88. $\frac{6}{7}$

89. $3\frac{3}{4}$

90. $\frac{5x}{6}$

91. 90

92. 60

93. $5q^2t$

94. 6

95. 60

96. $1\frac{2}{5}$

97. $-20\frac{5}{21}$