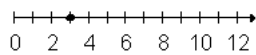
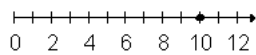


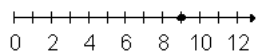
1. The inequality $6 > 5$ is read "6 _____ 5".
- A) 6 is greater than 5
B) 6 is less than 5
2. To write the number six hundred twenty-three thousand in standard form, write 623. Then replace the word *thousand* by a _____ followed by _____ zeros.
- A) period, two
B) comma, two
C) period, three
D) comma, three
E) comma, six
3. Graph the number 9 on the number line.
- A)



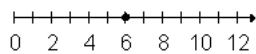
B)



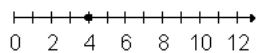
C)



D)



E)



4. On the number line, which number is 3 units to the left of 7?
- A) 12
 - B) 10
 - C) 5
 - D) 11
 - E) 4
5. Place the correct symbol, $<$ or $>$, between the two numbers 2075 and 2502.
- A) $2075 < 2502$
 - B) $2075 > 2502$
6. Place the correct symbol, $<$ or $>$, between the two numbers 4290 and 4301.
- A) $4290 < 4301$
 - B) $4290 > 4301$
7. Write the given numbers in order from smallest to largest.
4888, 405, 431, 489, 4220
- A) 4220, 4888, 405, 431, 489
 - B) 405, 431, 489, 4220, 4888
 - C) 431, 489, 4220, 4888, 405
 - D) 489, 4220, 4888, 405, 431
 - E) 4888, 405, 431, 489, 4220
8. Write the number 343,048 in words.
- A) three thousand forty-three hundred forty-eight
 - B) three million forty-three thousand forty-eight
 - C) three hundred forty-three thousand forty-eight
 - D) three million forty-three hundred forty-eight
 - E) three hundred forty-three thousand forty-eight hundred
9. Write the number five hundred thirty-seven thousand thirty-four in standard form.
- A) 537,034
 - B) 53,734
 - C) 5,037,340
 - D) 503,734
 - E) 537,340

10. Write the number five hundred thirty-seven in standard form.
- A) 5370
 - B) 5037
 - C) 53,700
 - D) 537
 - E) 50,037

11. Write the number 9416 in expanded form.
- A) $90000 + 400 + 10 + 6$
 - B) $9400 + 10 + 6$
 - C) $9000 + 410 + 6$
 - D) $9000 + 400 + 10 + 6$
 - E) $90000 + 4000 + 100 + 6$

12. Write the number 206,705 in expanded form.
- A) $200000 + 60000 + 700 + 5$
 - B) $200000 + 6000 + 700 + 5$
 - C) $200000 + 60000 + 7000 + 5$
 - D) $2000000 + 6000 + 700 + 5$
 - E) $2000000 + 60000 + 700 + 5$

13. Round 4647 to the nearest hundreds.
- A) 46,000
 - B) 4650
 - C) 4647
 - D) 5000
 - E) 4600

14. Round 5269 to the nearest thousands.
- A) 5269
 - B) 5270
 - C) 5000
 - D) 5300
 - E) 52,700

15. Determine whether the following statement is always true, never true, or sometimes true.
- A seven digit number rounded to the nearest hundred is less than than the number rounded to the nearest ten.
- A) Always true
 - B) Never true
 - C) Sometimes true
16. During a particular season Hank Aaron had 18 stolen bases. During the same season Roger Maris had 27 stolen bases. Which player had more stolen bases during that season?
- A) Roger Maris
 - B) Hank Aaron
17. Two tablespoons of chocolate syrup contain 116 calories. Two tablespoons of cooking oil contain 128 calories. Which contains more calories, two tablespoons of chocolate syrup or two tablespoons of cooking oil?
- A) Two tablespoons of cooking oil
 - B) Two tablespoons of chocolate syrup
18. The distance between St. Louis and Atlanta is 510 miles. The distance between St. Louis and Miami is 1233 miles. Which is the longer distance, St. Louis to Atlanta or St. Louis to Miami?
- A) St. Louis to Miami
 - B) St. Louis to Atlanta
19. The diameter of Mercury is 3040 miles. The diameter of Mars is 4240 miles. Which is the larger planet, Mercury or Mars?
- A) Mars
 - B) Mercury
20. The speed of light in a certain optical fiber is 263,684 km/s. What is the speed of light to the nearest ten thousand kilometers per second?
- A) 264,000
 - B) 263,700
 - C) 260,000
 - D) 263,680
 - E) 263,684

21. Add.

$$\begin{array}{r} 478,920 \\ 247,134 \\ + 179,013 \\ \hline \end{array}$$

- A) 904,967
- B) 905,057
- C) 905,067
- D) 905,077
- E) 895,067

22. Add.

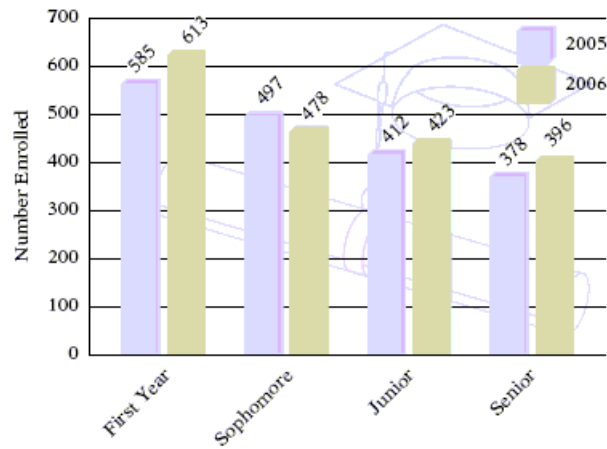
$$\begin{array}{r} 62,541 \\ 6196 \\ + 258,189 \\ \hline \end{array}$$

- A) 326,916
- B) 326,926
- C) 326,826
- D) 326,816
- E) 325,916

23. What is 49,092 increased by 62,465?

- A) 111,557
- B) 111,547
- C) 111,657
- D) 111,457
- E) 110,547

24. Use the figure below to determine the number of sophomores and juniors enrolled in the year 2006.



- A) 909
- B) 890
- C) 911
- D) 901
- E) 883

25. Evaluate the expression $x + y$ for the given values of x and y .
 $x = 623$, $y = 761$

- A) 1394
- B) 1374
- C) 1284
- D) 1274
- E) 1384

26. Evaluate the expression $a + b + c$ for the given values of a , b , and c .
 $a = 5110$

$$b = 1557$$

$$c = 6837$$

- A) 13,394
- B) 13,494
- C) 13,404
- D) 13,504
- E) 13,604

27. Identify the property that justifies the statement.

$$7 + 0 = 7$$

- A) The Addition Property of Zero
- B) The Associative Property of Addition
- C) The Commutative Property of Addition

28. Use the Commutative Property of Addition to complete the statement.

$$12 + 9 = ? + 9$$

- A) 9
- B) 12
- C) 17
- D) 0
- E) 1

29. Identify the solution of the equation $43 = n + 9$.

- A) $n = 31$
- B) $n = 35$
- C) $n = 34$
- D) $n = 0$
- E) $n = 24$

30. Subtract.

$$\begin{array}{r} 591 \\ - 452 \\ \hline \end{array}$$

- A) 139
- B) 149
- C) 239
- D) 129
- E) 249

31. Subtract.

$$\begin{array}{r} 4748 \\ - 2299 \\ \hline \end{array}$$

- A) 2439
- B) 2459
- C) 2549
- D) 2449
- E) 3459

32. Subtract.

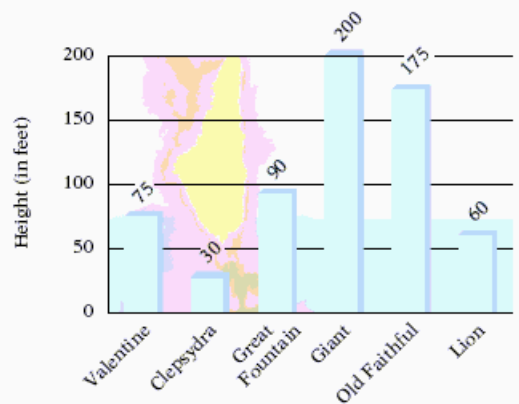
$$\begin{array}{r} 453,863 \\ - 29,024 \\ \hline \end{array}$$

- A) 425,849
- B) 424,849
- C) 424,939
- D) 425,839
- E) 424,839

33. What is 3294 less than 7627?

- A) 4433
- B) 4343
- C) 4333
- D) 4323
- E) 5343

34. Use the figure below to find the difference between the maximum height to which Valentine erupts and the maximum height to which Lion erupts.



The Maximum Heights of the Eruptions of Six Geysers at Yellowstone National Park

- A) 125
- B) 15
- C) 140
- D) 170
- E) 65

35. Identify a solution of the equation.

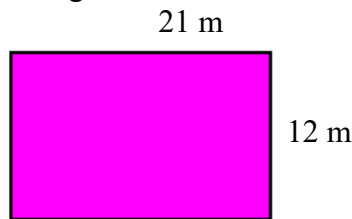
$$47 - z = 20$$

- A) $z = 37$
- B) $z = 27$
- C) $z = 17$
- D) $z = 30$
- E) $z = 25$

36. You eat an apple and one cup of cornflakes with one tablespoon of sugar and one cup of milk for breakfast. Find the total number of calories consumed if one apple contains 78 calories, one cup of cornflakes contains 98 calories, one tablespoon of sugar has 45 calories, and one cup of milk has 150 calories.

- A) 361
- B) 326
- C) 381
- D) 371
- E) 273

37. A rectangle has a length of 21 m and a width of 12 m. Find the perimeter of the rectangle.

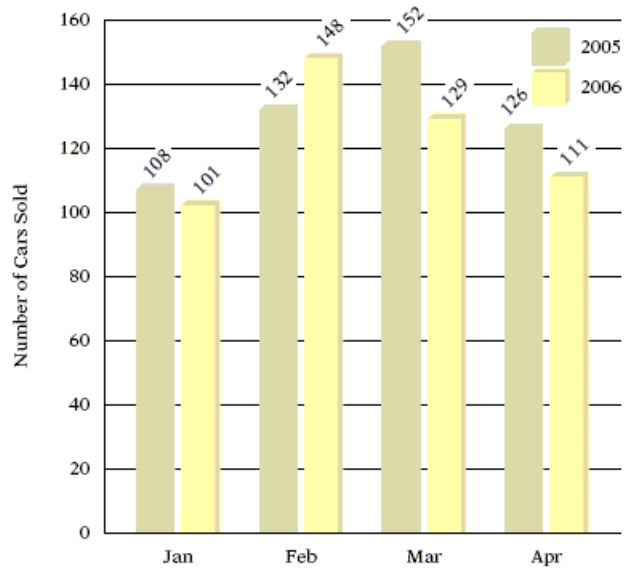


- A) 54
- B) 33
- C) 66
- D) 45
- E) 56

38. The computer system you would like to purchase includes an operating system priced at \$840, a monitor that costs \$340, an extended keyboard priced at \$170, and a printer that sells for \$375. What is the total cost of the computer system.

- A) \$1725
- B) \$1715
- C) \$1735
- D) \$1615
- E) \$1730

39. The figure below shows the number of cars sold by a dealership for the first four months of 2005 and 2006. Between which two months did car sales increase the most in 2005? What was the amount of the increase?



Car Sales at a Dealership 

- A) January to February, 47 cars
 B) January to February, 24 cars
 C) February to March, 26 cars
 D) February to March, 20 cars
 E) January to February, 27 cars
40. Use the formula $A = P + I$, where A is the value of an investment, P is the original investment, and I is the interest earned, to find the value of an investment that earned \$845 in interest on an original investment of \$12,400.
- A) \$13,145
 B) \$11,555
 C) \$13,345
 D) \$13,245
 E) \$12,345
41. What is the ground speed of an airplane traveling into a 25 mph headwind with an air speed of 380 mph? Use the formula $g = a - h$, where g is the ground speed, a is the air speed, and h is the speed of the headwind.
- A) 375 mph
 B) 405 mph
 C) 355 mph
 D) 345 mph
 E) 385 mph

42. Multiply.

$$(3248)(8)$$

- A) 25,984
- B) 23,984
- C) 25,994
- D) 26,184
- E) 26,984

43. Multiply.

$$(28,886)(31)$$

- A) 895,566
- B) 895,466
- C) 895,456
- D) 905,476
- E) 894,456

44. Write the product of 6 and 50.

- A) 306
- B) 56
- C) 3000
- D) 30
- E) 300

45. What is twice 300?

- A) 320
- B) 302
- C) 600
- D) 6000
- E) 60

46. Evaluate xyz for $x = 6$, $y = 16$, and $z = 45$.

- A) 4420
- B) 4310
- C) 4320
- D) 5330
- E) 4220

47. Identify the property that justifies the statement.

$$3 \cdot 15 = 15 \cdot 3$$

- A) Commutative Property of Multiplication
- B) Associative Property of Multiplication
- C) Multiplication Property of Zero

48. Use the Multiplication Property of Zero to complete the statement.

$$11 \cdot 0 = ?$$

- A) 1
- B) 11
- C) 110
- D) 0
- E) 12

49. Is 4 a solution of the equation $2x = 8$?

- A) Yes
- B) No

50. Write the expression in exponential form.

$$2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5$$

- A) $2^4 \cdot 3^3 \cdot 5^5$
- B) $2^2 \cdot 3^4 \cdot 5^5$
- C) $2^3 \cdot 3^2 \cdot 5^6$
- D) $2^3 \cdot 3^3 \cdot 5^5$
- E) $2^3 \cdot 3^4 \cdot 5^5$

51. Write the expression in exponential form.

$$x \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot z \cdot z \cdot z \cdot z$$

- A) $x^5 \cdot y^3 \cdot z^4$
- B) $x^4 \cdot y^4 \cdot z^4$
- C) $x^5 \cdot y^2 \cdot z^5$
- D) $x^6 \cdot y^3 \cdot z^4$
- E) $x^5 \cdot y^4 \cdot z^4$

52. Evaluate.

$$10^8$$

- A) 10,000,000
- B) 100,000,000
- C) 1,000,000
- D) 1,000,000,000
- E) 1,e10

53. Evaluate.

$$4^2 \cdot 10^5$$

- A) 40,000
- B) 160,000
- C) 400,000
- D) 1,600,000
- E) 16,000,000

54. Find the cube of 9.

- A) 243
- B) 81
- C) 27
- D) 6561
- E) 729

55. Evaluate the expression $a \cdot b^n$ for the given values.

$$a = 6, b = 2, n = 4$$

- A) 192
- B) 48
- C) 96
- D) 16
- E) 12

56. Divide.

$$8 \overline{)2110}$$

- A) 263, remainder 0
- B) 263, remainder 6
- C) 261, remainder 6
- D) 263, remainder 5
- E) 261, remainder 5

57. Divide.

$$5973 \div 39$$

- A) 150, remainder 5
- B) 153, remainder 0
- C) 150, remainder 6
- D) 153, remainder 5
- E) 153, remainder 6

58. What is 4887 divided by 8?

- A) 610, remainder 7
- B) 610, remainder 0
- C) 607, remainder 7
- D) 610, remainder 6
- E) 607, remainder 6

59. Divide.

$$246 \overline{)229,347}$$

- A) 930, remainder 75
- B) 932, remainder 0
- C) 932, remainder 75
- D) 932, remainder 74
- E) 930, remainder 74

60.

$$\frac{x}{y}$$

Evaluate the variable expression $\frac{x}{y}$ for the given values.

$$x = 31; y = 0$$

- A) 0
- B) 31
- C) 1
- D) undefined

61. Identify a solution of the equation $5 = \frac{x}{7}$?
- A) 35
 - B) 12
 - C) $\frac{5}{7}$
 - D) $\frac{7}{5}$
 - E) 2

62. Find all the factors of the number 20.
- A) 1, 2, 5, 20
 - B) 1, 2, 4, 5, 10, 20
 - C) 1, 20
 - D) 1, 2, 5, 10, 20
 - E) 2, 4, 5, 10

63. Find all factors of the number 53.
- A) 1, 13, 17, 53
 - B) 53
 - C) 1, 26, 53
 - D) 1, 53
 - E) 1, 11, 17, 19, 53

64. Find the prime factorization of the number 108.
- A) $2^3 \cdot 3$
 - B) $2^3 \cdot 3^3$
 - C) $2 \cdot 3^4$
 - D) $2^2 \cdot 3^3$
 - E) $2^2 \cdot 3^4$

65. Find the prime factorization of the number 91.
- A) $7 \cdot 13$
 - B) $3 \cdot 5 \cdot 13$
 - C) $3 \cdot 5 \cdot 7$
 - D) $3 \cdot 7^2$
 - E) $3^2 \cdot 13$

66. A plane flying from New York City to Seattle uses 835 gal of jet fuel each hour. How many gallons of fuel are consumed on a five hour flight?
- A) 3675 gal
 - B) 4180 gal
 - C) 4275 gal
 - D) 3975 gal
 - E) 4175 gal
67. A fieldstone patio is in the shape of a rectangle with a length of 36 ft and a width of 26 ft. What is the area of the patio?
- A) 3744 ft²
 - B) 62 ft²
 - C) 936 ft²
 - D) 1872 ft²
 - E) 468 ft²
68. A buyer for a department store purchased 812 suits at \$71 each. Estimate the total cost of the order.
- A) \$112,000
 - B) \$5600
 - C) \$72,000
 - D) \$56,000
 - E) \$28,000
69. Find the total amount paid on a loan when the monthly payment is \$265 and the loan is paid off in 18 months. Use the formula $A = MN$ where A is the total paid, M is the monthly payment, and N is the number of months of the loan.
- A) \$4740
 - B) \$4800
 - C) \$4770
 - D) \$4,970
 - E) \$4370
70. Simplify.
 $12 \div 2 + 4$
- A) 10
 - B) 2
 - C) 6
 - D) 18
 - E) 20

71. Simplify.

$$8 \cdot 5 + 6$$

- A) 88
- B) 53
- C) 19
- D) 46
- E) 45

72. Simplify.

$$2 \cdot (8 - 2) + 9$$

- A) 30
- B) 23
- C) 21
- D) 17
- E) 3

73. Simplify.

$$6 \cdot (3 + 4) \div 3$$

- A) 42
- B) 10
- C) 11
- D) 9
- E) 14

74. Simplify.

$$3 \cdot 5^2 + 6$$

- A) 93
- B) 231
- C) 34
- D) 81
- E) 70

75. Simplify.

$$2^3 + 5(10 - 5)$$

- A) 33
- B) 348
- C) 53
- D) 65
- E) 18

76. Simplify.

$$3(9-3)-15$$

- A) 9
- B) 63
- C) 33
- D) 1
- E) 3

77. Simplify.

$$2+8-10\cdot 4\div 2$$

- A) -15
- B) 0
- C) -10
- D) -12
- E) -7

78. Evaluate the expression $x-4y$ for the given values of x and y .

$$x=3, y=4$$

- A) -8
- B) -13
- C) 19
- D) 13
- E) -12

79. Evaluate the expression x^2+2y for the given values of x and y .

$$x=8, y=9$$

- A) 97
- B) 85
- C) 136
- D) 676
- E) 82

80. Evaluate the expression x^2+5y for the given values of x and y .

$$x=6, y=7$$

- A) 79
- B) 72
- C) 78
- D) 1681
- E) 71

81. Evaluate the expression $x^2 + y \div x$ for the given values of x and y .
 $x = 3, y = 15$
- A) 14
 - B) 6
 - C) 17
 - D) 48
 - E) 12
82. Evaluate the expression $x^2 + 3(x - y) + z^2$ for the given values of $x, y,$ and z .
 $x = 5, y = 4, z = 9$
- A) 89
 - B) 145
 - C) 117
 - D) 109
 - E) 37
83. Insert parentheses as needed in the expression $8 + 6 \cdot 4 - 1$ to make the equation true.
 $8 + 6 \cdot 4 - 1 = 26$
- A) $8 + (6 \cdot 4 - 1) = 26$
 - B) $(8 + 6) \cdot 4 - 1 = 26$
 - C) $8 + 6 \cdot (4 - 1) = 26$
 - D) $(8 + 6) \cdot (4 - 1) = 26$
 - E) $(8 + 6 \cdot 4) - 1 = 26$
84. Insert parentheses as needed in the expression $8 + 7 \cdot 2 - 1$ to make the equation true.
 $8 + 7 \cdot 2 - 1 = 29$
- A) $8 + (7 \cdot 2 - 1) = 29$
 - B) $(8 + 7) \cdot 2 - 1 = 29$
 - C) $8 + 7 \cdot (2 - 1) = 29$
 - D) $(8 + 7) \cdot (2 - 1) = 29$
 - E) $(8 + 7 \cdot 2) - 1 = 29$

Answer Key

1. A
2. D
3. C
4. E
5. A
6. A
7. B
8. C
9. A
10. D
11. D
12. B
13. E
14. C
15. C
16. A
17. A
18. A
19. A
20. C
21. C
22. B
23. A
24. D
25. E
26. D
27. A
28. B
29. C
30. A
31. D
32. E
33. C
34. B
35. B
36. D
37. C
38. A
39. B
40. D
41. C
42. A
43. B
44. E

- 45. C
- 46. C
- 47. A
- 48. D
- 49. A
- 50. D
- 51. A
- 52. B
- 53. D
- 54. E
- 55. C
- 56. B
- 57. E
- 58. A
- 59. C
- 60. D
- 61. A
- 62. B
- 63. D
- 64. D
- 65. A
- 66. E
- 67. C
- 68. D
- 69. C
- 70. A
- 71. D
- 72. C
- 73. E
- 74. D
- 75. A
- 76. E
- 77. C
- 78. B
- 79. E
- 80. E
- 81. A
- 82. D
- 83. C
- 84. B