**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.
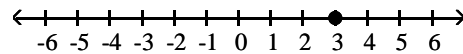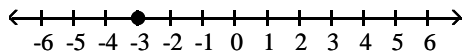
1) Write an integer that represents the numerical value.   1) _____
Jim's golf score is 3 over par.
   A) 0.3   B) 3   C) -3   D) –0.3

2) Write an integer that represents the numerical value.   2) _____
A small business experienced a loss of $40,000 last year.
   A) $-\dfrac{1}{\$40,000}$ B) $\dfrac{1}{\$40,000}$ C) -$40,000   D) $40,000

3) Graph the number on the number line.   3   3) _____
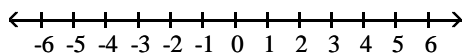
   A)

   B)

4) Which number is closer to 1 on the number line? -1 or 5   4) _____
   A) -1   B) 5

5) Fill in the blank with $<$ or $>$ to make a true statement.   5) _____
-2 ___ -5
   A) $>$ B) $<$

6) Fill in the blank with $<$ or $>$ to make a true statement.   6) _____
-593 ___ 584
   A) $>$ B) $<$

7) Determine the absolute value.   7) _____
$|-4|$
   A) -4   B) 4

8) Determine the absolute value.   8) _____
$|193,000|$
   A) 193,000   B) -193,000

9) Which is greater, -1 or $|-1|$?   9) _____
   A) -1
   B) Neither, they are equal.
   C) $|-1|$

1

10) Which is greater, 12 or $|12|$?

    A) 12

    B) Neither, they are equal.

    C) $|12|$

10) _____

11) Find the opposite. 27

    A) $|27|$ B) $|-27|$ C) -27   D) 27
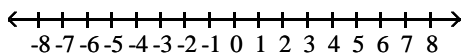
11) _____

12) Find the opposite. -34

    A) -34   B) 34   C) $-|-34|$ D) $-|34|$

12) _____

13) Simplify the expression.

  - (-8)

    A) -8   B) 8

13) _____

14) Simplify the expression.

  $-|-5|$

    A) -5   B) 5

14) _____

15) Simplify the expression.

  $-|7|$

    A) -7   B) 7

15) _____

16) Refer to the number line to add the integers.

```
<--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+-->
  -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8
```

-2 + 4

    A) -6   B) -2   C) 6   D) 2

16) _____

17) Refer to the number line to add the integers.

```
<--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+-->
  -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8
```

4 + (-3)
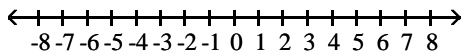
    A) 1   B) -1   C) -7   D) 7

17) _____

18) Refer to the number line to add the integers.

```
<--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+-->
  -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8
```

-1 + (-2)

    A) -1   B) 3   C) -3   D) 1

18) _____
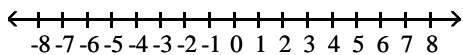
19) Refer to the number line to add the integers.   19) _____
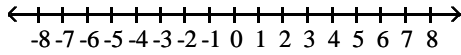
$$0 + (-4)$$
   A) 4   B) -4

20) Add the numbers with the same sign.   20) _____
   $$23 + 50$$
   A) 27   B) -27   C) 73   D) -73

21) Add the numbers with the same sign.   21) _____
   $$-55 + (-30)$$
   A) 85   B) 25   C) -85   D) -25

22) Add the numbers with the same sign.   22) _____
   $$-566 + (-717)$$
   A) -151   B) 1283   C) -1283   D) 151

23) Add the numbers with different signs.   23) _____
   $$-29 + 30$$
   A) -1   B) 1   C) 59   D) -59

24) Add the numbers with different signs.   24) _____
   $$44 + (-54)$$
   A) -98   B) -10   C) 10   D) 98

25) Add the numbers with different signs.   25) _____
   $$2 + (-2)$$
   A) 4   B) -4   C) 0

26) Add the numbers with different signs.   26) _____
   $$-26 + 26$$
   A) 52   B) -52   C) 0

27) Add the numbers with different signs.   27) _____
   $$2278 + (-3294)$$
   A) -5572   B) 1016   C) -1016   D) 5572

28) Translate to a mathematical expression. Then simplify the expression.   28) _____
   The sum of -28 and 31
   A) -28 + (-31); -3   B) -28 + (-31); -59
   C) -28 + 31; 3   D) -28 + 31; -59

3

29) Translate to a mathematical expression. Then simplify the expression.   29) _____
   -4 added to the sum of -2 and 9
      A) (-2 + 9) + (-4); -11   B) (2 + 9) + (-4); 15
      C) (-2 + 9) + (-4); 3   D) (2 + 9) + (-4); 7

30) The table gives the scores for the top two finishers at a recent golf tournament.   30) _____

	Round 1	Round 2	Round 3	Round 4
Tang	3	-2	-1	-3
Hakob	-4	0	-1	1

   Compute Tang's total score.
      A) -6   B) -4   C) -9   D) -3

31) At midnight the temperature was -5°F. By noon, the temperature had risen by 6°F.   31) _____
   What was the temperature at noon?
      A) -11°F   B) 11°F   C) -1°F   D) 1°F

32) A contestant on a game show won the following amounts for several questions she   32) _____
   answered. Determine her total score.
      -$400,   -$200, $900,   -$500, $600
      A) -$2600   B) $2600   C) $400   D) -$400

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

33) Find two integers whose sum is -12.   33) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

34) Rewrite the subtraction problem as an equivalent addition problem. Then simplify.   34) _____
   5 - 8 = ___ + ___ = ___
      A) 5 + (-8); -3   B) -5 + 8; 3   C) 5 + (-8); 3   D) -5 + 8; -3

35) Rewrite the subtraction problem as an equivalent addition problem. Then simplify.   35) _____
   4 - (-8) = ___ + ___ = ___
      A) -4 + 8; 4   B) 4 + (-8); -4   C) 4 + 8; 12   D) -4 + (-8); -12

36) Rewrite the subtraction problem as an equivalent addition problem. Then simplify.   36) _____
   -9 - 13 = ___ + ___ = ___
      A) -9 + 13; 4   B) -9 + (-13); -22
      C) 9 + 13; 22   D) 9 + (-13); -4

4

37) Rewrite the subtraction problem as an equivalent addition problem. Then simplify.   37) _____
    -12 - (-20) = ___ + ___ = ___
        A) -12 + (-20); -32   B) -12 + 20; 8
        C) 12 + 20; 32   D) 12 + (-20); -8

38) Simplify.   38) _____
    34 – (-13)
        A) 47   B) 21   C) -21   D) -47

39) Simplify.   39) _____
    -35 - 9
        A) 26   B) -44   C) 44   D) -26

40) Simplify.   40) _____
    38 - 92
        A) -54   B) -130   C) 54   D) 130

41) Simplify.   41) _____
    -61 - (-79)
        A) -18   B) -140   C) 18   D) 140

42) Simplify.   42) _____
    -831 - 22
        A) -853   B) 809   C) -809   D) 853

43) Simplify.   43) _____
    -3091 - (-8590)
        A) 5499   B) -5499   C) -11,681   D) 11,681

44) Simplify.   44) _____
    3 - 4 + 17 - (-2)
        A) -22   B) 18   C) 22   D) -18

45) Simplify.   45) _____
    33 – 12 – (-38)
        A) 7   B) -59   C) -7   D) 59

46) Translate the English phrase to a mathematical expression. Then simplify.   46) _____
    310 decreased by -20
        A) 310 – 20; 290   B) 310 – 20; -290
        C) 310 – (-20); 330   D) 310 – (-20); -330

47) Translate the English phrase to a mathematical expression. Then simplify.   47) _____
   40 less than -80
      A) 40 – 80; -40   B) 40 – 80; 40
      C) 40 – (-80); 120   D) -80 – 40; -120

48) If Justin's balance on his credit card was -$280 and he made the minimum payment of   48) _____
   $45, what is his new balance?
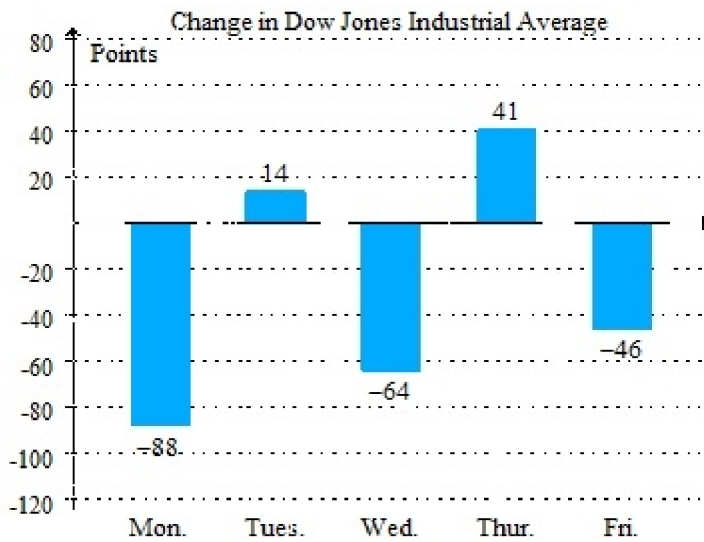   A) -$325   B) $325   C) -$235   D) $235

49) Refer to the graph indicating the change in value of the Dow Jones Industrial Average for   49) _____
   a given week.

   What is the difference value from Thursday to Friday?
      A) -87   B) -5   C) 87   D) 5

6

50) Refer to the graph indicating the change in value of the Dow Jones Industrial Average for a given week.

Change in Dow Jones Industrial Average
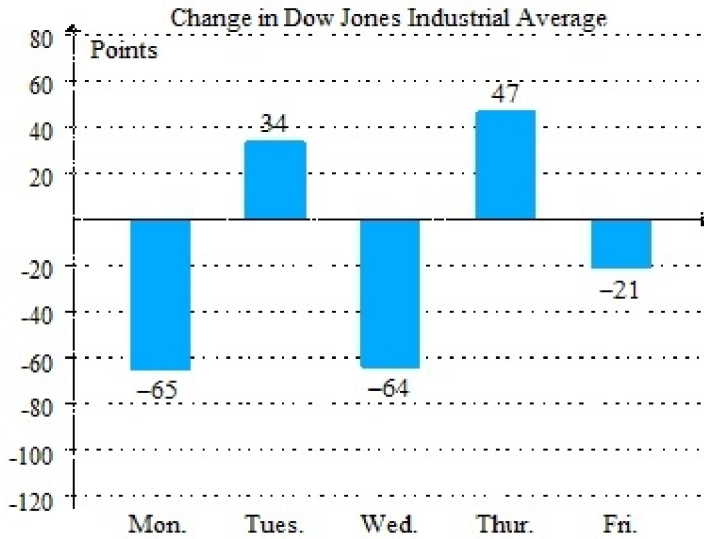
What is the total change for the week?

A) 231   B) -69   C) -231   D) 69

51) Find the range. The *range* of a set of numbers is the difference between the highest value and the lowest value. That is, range = highest – lowest.
Low temperatures for 1 week in Coldsville.(°C): -1°, -10°,-15°, -1°, -9°, -8°, -9°

A) 8°   B) 14°   C) -8°   D) -14°

52) Find two integers whose difference is -14.

A) 24 – (-38)   B) 24 – 38   C) 38 – (-24)   D) 38 – 24

53) Write the next three numbers in the sequence.
6, 2, -2, -6, ___, ___, ___

A) -10, -13, -16   B) -10, -14, -18   C) -9, -13, -17   D) -9, -12, -15

54) Multiply the integers.
-9(6)

A) 3   B) -3   C) -54   D) 54

55) Multiply the integers.
-8(-9)

A) 17   B) -72   C) -17   D) 72

56) Multiply the integers.
8(-2)

A) -6   B) -16   C) 16   D) 6

50) _____

51) _____

52) _____

53) _____

54) _____

55) _____

56) _____

57) Multiply the integers.   57) _____
   -6 · 0
      A) 0   B) 6   C) 1   D) -6

58) Translate to a mathematical expression. Then simplify.   58) _____
   The product of -5 and 9
      A) -5 · 9; -45   B) -5 · 9; 45   C) -5 + 9; 4   D) -5 + 9; -4

59) Translate to a mathematical expression. Then simplify.   59) _____
   6 times -9
      A) 6(-9); 54   B) 6(-9); -54   C) 6 + (-9); 3   D) 6 + (-9); -3

60) Travis wrote five checks to the employees of his business, each for $335. If the original   60) _____
   balance in his checking account was $1230, what was the new balance?
      A) -$445   B) -$895   C) $445   D) $895

61) Multiply.   61) _____
   (-3)(-5)(-6)(-7)
      A) -630   B) 630   C) -21   D) 21

62) Multiply.   62) _____
   (-4)(-2)(-7)
      A) -13   B) 13   C) -56   D) 56

63) Multiply.   63) _____
   (2)(-2)(-2)(-2)(2)(-2)
      A) -4   B) 64   C) -64   D) 4

64) Simplify.   64) _____
   $(-11)^2$
      A) 22   B) 121   C) -121   D) -22

65) Simplify.   65) _____
   $(-5)^3$
      A) 125   B) 15   C) -15   D) -125

66) Simplify.   66) _____
   -4^4
      A) -16   B) -256   C) 16   D) 256

8

67) Simplify.
$(-5)^4$

67) _____

  A) -20 B) -625 C) 625 D) 20

68) Simplify.
-1^{12}

68) _____

  A) –1 B) 1 C) -12 D) 12

69) Divide the real numbers, if possible.
$$\frac{-36}{4}$$

69) _____

  A) 0 B) Undefined C) 9 D) -9

70) Divide the real numbers, if possible.
$$\frac{-11}{0}$$

70) _____

  A) Undefined B) -11 C) 11 D) 0

71) Divide the real numbers, if possible.
$$\frac{0}{-9}$$

71) _____

  A) Undefined B) 0 C) 9 D) -9

72) Divide the real numbers, if possible.
$(-12) \div (-4)$

72) _____

  A) Undefined B) 3 C) -3 D) 0

73) Divide the real numbers, if possible.
$$\frac{108}{-3}$$

73) _____

  A) -36 B) Undefined C) 0 D) 36

74) Translate the English phrase to a mathematical expression. Then simplify.
The quotient of 144 and -48

74) _____

  A) $-48 \div 144$; 3 B) $-48 \div 144$; -3
  C) $144 \div (-48)$; 3 D) $144 \div (-48)$; -3

75) The temperature plunged from 37°F to -11°F in 12 hr. What was the average change in temperature during this time?

75) _____

  A) -36°F B) 4°F C) 36°F D) -4°F

76) During a drought, the change in elevation for a retention pond was -8 in. over a 1-month   76) _____
period. At this rate, what will the change in elevation be after 3 months?
    A) 24 in.   B) -24 in.   C) 5 in.   D) -5 in.

77) Simplify using the order of operations.   77) _____
-8 - 6 - 4 - 2
    A) -20   B) 4   C) -4   D) 20

78) Simplify using the order of operations.   78) _____
-3(6 - 7) + 11
    A) 14   B) -28   C) 28   D) -14

79) Simplify using the order of operations.   79) _____
96 - 24 ÷ (-3)(4)
    A) 98   B) -6   C) 128   D) -96

80) Simplify using the order of operations.   80) _____
$|-5 + 15| - |-8|$
    A) 28   B) 12   C) 2   D) 18

81) Simplify using the order of operations.   81) _____
$\sqrt{225 - 81} - 2\sqrt{4}$
    A) $3\sqrt{34} - 4$ B) 20   C) 8   D) 2

82) Simplify using the order of operations.   82) _____
$16 + (14 - 16)^2 ÷ -4$
    A) 15   B) 17   C) -3   D) -5

83) Simplify using the order of operations.   83) _____
$[8^2 - 6^2] ÷ (-5 + 3)$
    A) -14   B) -2   C) 2   D) 14

84) Simplify using the order of operations.   84) _____
$$\frac{-80 + (-4)^2}{-5 + 21}$$
    A) -4   B) 4   C) 6   D) -6

85) Simplify using the order of operations.   85) _____
$$\frac{36 - (5)(6)}{-2 - 2^2}$$
    A) -1   B) Undefined   C) 1   D) 0

86) Simplify using the order of operations.   86) _____

$$\frac{|-50 + 2|}{4^2 - (-2)^2}$$

    A) 4   B) Undefined   C) -4   D) 0

87) Simplify using the order of operations.   87) _____
    $17 – [4 – (3 – 5)]$
    A) 15   B) 5   C) 21   D) 11

88) Simplify using the order of operations.   88) _____
    $-22 – 2[9 \div (-3)]$
    A) 16   B) -16   C) -28   D) 28

89) Carolyn sells homemade candles. Write an expression for her total revenue if she sells x 89) _____
    candles for $5 each.

    A) $5x$ B) $\frac{x}{5}$ C) $5 + x$ D) $\frac{5}{x}$

90) Bill's daughter is 34 years younger than he is. Write an expression for his daughter's age   90) _____
    if Bill is A years old.
    A) $34 – A$ B) $34A$ C) $A – 34$ D) $A + 34$

91) Write the phrase as an algebraic expression.   91) _____
    The product of -17 and n.

    A) $-17n$ B) $-17 + n$ C) $\frac{x}{-17}$ D) $\frac{-17}{x}$

92) Write the phrase as an algebraic expression.   92) _____
    The quotient of t and -2

    A) $\frac{t}{-2}$ B) $-2 – t$ C) $\frac{-2}{t}$ D) $-2t$

93) Write the phrase as an algebraic expression.   93) _____
    Six times the sum of s and t
    A) $6 + st$ B) $6s + t$ C) $6st$ D) $6(s + t)$

94) Write the phrase as an algebraic expression.   94) _____
    The difference of x and -3
    A) $3 – x$ B) $-3 – x$ C) $x – (-3)$ D) $x – 3$

95) Evaluate the expression for the given values of the variables.   95) _____
   $x + 5z$ for $x = -10$ and $z = -7$
   A) -57   B) 57   C) 45   D) -45

96) Evaluate the expression for the given values of the variables.   96) _____
   $-3mn$ for $m = -8$ and $n = -4$
   A) -15   B) 15   C) 96   D) -96

97) Evaluate the expression for the given values of the variables.   97) _____
   $|-y|$ for $y = -7$
   A) 7   B) 0   C) 1   D) -7

98) Evaluate the expression for the given values of the variables.   98) _____
   x^2 for $x = -9$
   A) -18   B) 18   C) -81   D) 81

99) Evaluate the expression for the given values of the variables.   99) _____
   $-x^2$ for $x = -5$
   A) -10   B) 25   C) 10   D) -25

100) Evaluate the expression for the given values of the variables.   100) _____
   $-4|x + 5y|$ for $x = 7$ and $y = -3$
   A) 32   B) 43   C) -43   D) -32

1) B
2) C
3) B
4) A
5) A
6) B
7) B
8) A
9) C
10) B
11) C
12) B
13) B
14) A
15) A
16) D
17) A
18) C
19) B
20) C
21) C
22) C
23) B
24) B
25) C
26) C
27) C
28) C
29) C
30) D
31) D
32) C
33) Answers may vary. For example: -2 + (-10)
34) A
35) C
36) B
37) B
38) A
39) B
40) A
41) C
42) A
43) A
44) B
45) D
46) C
47) D
48) C
49) C
50) B

51) B
52) B
53) B
54) C
55) D
56) B
57) A
58) A
59) B
60) A
61) B
62) C
63) B
64) B
65) D
66) B
67) C
68) A
69) D
70) A
71) B
72) B
73) A
74) D
75) D
76) B
77) A
78) A
79) C
80) C
81) C
82) A
83) A
84) A
85) A
86) A
87) D
88) B
89) A
90) C
91) A
92) A
93) D
94) C
95) D
96) D
97) A
98) D
99) D
100) D