

Name _____

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

Substitute to find the value of the expression.

- 1) Traveling at r kilometers per hour for t hours, a driver will travel rt kilometers. How far will Danny travel in 10 hours at a speed of 99 kilometers per hour?
- A) 9.9 km B) 109 km C) 990 mi D) 990 km

Answer: D

- 2) A plane flies at 685 miles per hour. The time, in hours, for the plane to travel a distance of d miles is $\frac{d}{685}$. How long will it take for the plane to travel 8220 miles?
- A) 12 hr B) 0.08 hr C) 15 hr D) 5,630,700 hr

Answer: A

- 3) A train must cover a distance of 2673 miles. The velocity, in miles per hour, of the train is $\frac{2673}{t}$ where t is the time, in hours, to complete the trip. If the train completes the trip in 27 hours, what is its velocity?
- A) 94 mph B) 99 mph C) 0.01 mph D) 72,171 mph

Answer: B

- 4) The area of a triangle with base b and height h is given by the formula $A = \frac{1}{2}bh$. Find the area of a triangle when the base is 5.3 centimeters and the height is 7.2 centimeters.
- A) 0.37 cm^2 B) 15.264 cm^2 C) 38.16 cm^2 D) 19.08 cm^2

Answer: D

- 5) The area of a rectangle of length ℓ and width w is given by the formula $A = \ell w$. Ann's backyard is rectangular with a length of 34.5 yards and a width of 13.0 yards. Find the area of Ann's backyard.
- A) 448.50 yd B) 448.50 yd^2 C) 47.5 yd^2 D) 47.5 yd

Answer: B

- 6) In one store, bananas cost 60 cents per pound. The cost, in dollars, of x pounds of bananas is $0.6x$. What is the cost of 1.3 pounds of bananas?
- A) \$0.98 B) \$0.22 C) \$2.17 D) \$0.78

Answer: D

- 7) Bill takes four times as long to do a job as Jose. Suppose t represents the time it takes Bill to do the job. Then $t/4$ represents the time it takes Jose. How long does it take Jose if it takes Bill 63 minutes?
- A) 252.00 min B) 59.00 min C) 67.00 min D) 15.75 min

Answer: D

- 8) Mary earns three times as much per week as Maureen. If x represents the amount that Maureen earns per week, then $3x$ represents the amount that Mary earns per week. How much does Mary earn per week if Maureen earns \$349 per week?
- A) \$1047 B) \$352 C) \$116.33 D) \$346

Answer: A

Evaluate.

9) $x + y$, when $x = 3$ and $y = 8$

A) 11

B) -11

C) 24

D) -5

Answer: A

10) $2x$, when $x = 4$

A) 36

B) 8

C) 20

D) 6

Answer: B

11) $\frac{p}{q}$, when $p = 16$ and $q = 4$

A) 5

B) $4\frac{1}{4}$

C) 3

D) 4

Answer: D

12) $\frac{9m}{n}$, when $m = 20$ and $n = 4$

A) 5

B) 45

C) 9

D) 90

Answer: B

13) $\frac{x+y}{10}$, when $x = 13$ and $y = 57$

A) 6

B) 8

C) 5

D) 7

Answer: D

14) $\frac{7x+7y}{7}$, when $x = 42$ and $y = 21$

A) 63

B) 49

C) 45

D) 441

Answer: A

Translate the phrase to an algebraic expression.

15) Two times x

A) $2 - x$

B) $2 + x$

C) $2x$

D) $\frac{2}{x}$

Answer: C

16) Three multiplied by x

A) $3 + x$

B) $3x$

C) $\frac{3}{x}$

D) $3 - x$

Answer: B

17) Two more than x

A) $2x$

B) $x + 2$

C) $\frac{2}{x}$

D) $2 - x$

Answer: B

18) x increased by three

A) 3

B) $3x$

C) $x + 3$

D) $x - 3$

Answer: C

19) Nine less than x

A) $9 - x$

B) $x - 9$

C) $\frac{9}{x}$

D) $9x$

Answer: B

20) x subtracted from y

A) $y - x$

B) $\frac{y}{x}$

C) $\frac{x}{y}$

D) $x - y$

Answer: A

21) The quotient of x divided by five

A) $5x$

B) $5 + x$

C) $5 - x$

D) $\frac{x}{5}$

Answer: D

22) Two divided by x

A) $2x$

B) $\frac{2}{x}$

C) $2 + x$

D) $2 - x$

Answer: B

23) Twice x

A) $3 + x$

B) $3x$

C) $2x$

D) $2 + x$

Answer: C

24) The sum of x and y

A) xy

B) $\frac{x}{y}$

C) $x + y$

D) $2xy$

Answer: C

Translate to an algebraic expression.

25) Robbie drove his car at 50 mph for x hours. How many miles did he travel?

A) $\frac{50}{x}$

B) $50x$

C) $50 - x$

D) $\frac{x}{50}$

Answer: B

26) Leanne had \$21 remaining after paying y dollars for a dinner and a movie. How much did she have at the start of the evening?

A) $y - \$21$

B) $\$21y$

C) $\$21 - y$

D) $\$21 + y$

Answer: D

27) Monica had \$31 before spending y dollars for a snack. How much money remains?

A) $\$31 + y$

B) $\$31y$

C) $\$31 - y$

D) $y - \$31$

Answer: C

- 28) Alex had y dollars before spending \$32.50 for a book. How much did he have after the purchase?
A) $\$32.50 + y$ B) $y - \$32.50$ C) $\$32.50 - y$ D) $\$32.50y$

Answer: B

State the real number that corresponds to the situation.

- 29) The stock market lost 19 points on Monday.

A) -19

B) 19

Answer: A

- 30) During one year, 28 employees started work at Newline Manufacturing Company.

A) -28

B) 28

Answer: B

- 31) A football team lost 8 yards on one play.

A) -8

B) 8

Answer: A

- 32) In one state, the highest point is 4092 feet above sea level.

A) -4092

B) 4092

Answer: B

- 33) One country exported \$74,800,000 less than it imported, giving it a negative trade balance.

A) -74,800,000

B) 74,800,000

Answer: A

- 34) Sales at Andrea's Formal Wear Shop were \$5209 less this week than the sales last week.

A) -5209

B) 5209

Answer: A

- 35) Mr. Voss decreased his speed by 18 miles per hour.

A) 18

B) -18

Answer: B

- 36) On a cloudy day, the water temperature in the swimming pool drops 2 degrees.

A) -2

B) 2

Answer: A

- 37) This year corn production decreased 8,000 pounds from last year on Steve's farm.

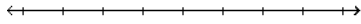
A) -8,000

B) 8,000

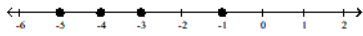
Answer: A

Graph the numbers on a number line.

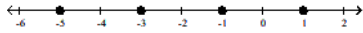
38) -5, -3, -1, 1



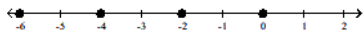
A)



B)



C)



D)



Answer: B

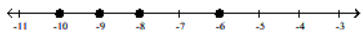
39) -10, -8, -6, -4



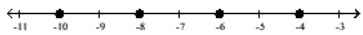
A)



B)



C)

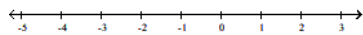


D)

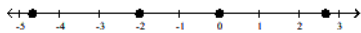


Answer: C

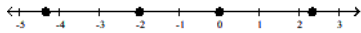
40) $-4\frac{2}{3}, -2, 0, 2\frac{2}{3}$



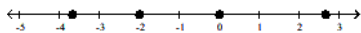
A)



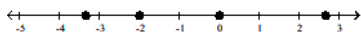
B)



C)

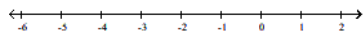


D)

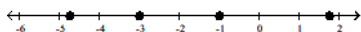


Answer: A

41) $-5.75, -3, -1, 1.25$



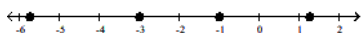
A)



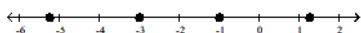
B)



C)



D)



Answer: C

Convert to decimal notation.

42) $-\frac{3}{8}$

A) 0.375

B) $-0.\overline{375}$

C) $-0.\overline{375}$

D) -0.375

Answer: D

43) $\frac{5}{16}$

A) 0.9375

B) 0.3125

C) 0.625

D) 0.45

Answer: B

44) $\frac{11}{6}$

A) $1.\overline{833}$

B) $1.\overline{83}$

C) 1.8

D) $1.\overline{8\bar{3}}$

Answer: D

45) $-\frac{1}{3}$

A) $-0.\overline{3}$

B) $0.\overline{3}$

C) -3

D) 0.33333333

Answer: A

46) $\frac{2}{9}$

A) 0.2

B) $0.\overline{6}$

C) $0.\overline{2}$

D) $2.\overline{2}$

Answer: C

47) $-\frac{5}{4}$

A) -0.125

B) -1.25

C) $-0.\overline{125}$

D) -0.625

Answer: B

48) $\frac{17}{16}$

A) -1.0625

B) 1.0625

C) 3.1875

D) 2.125

Answer: B

49) $-\frac{17}{10}$

A) $-1.\overline{7}$

B) -1.7

C) -0.17

D) -3.4

Answer: B

50) $\frac{2}{15}$

A) $0.1\overline{3}$

B) 0.1

C) $0.\overline{1}$

D) $7.5\overline{0}$

Answer: A

51) $-\frac{19}{40}$

A) -0.48

B) $-0.47\overline{5}$

C) $-0.47\overline{5}$

D) -0.475

Answer: D

52) $\frac{23}{99}$

A) 0.23

B) $0.\overline{23}$

C) $0.\overline{232}$

D) $0.\overline{23}$

Answer: D

Insert < or > to write a true statement.

53) $2 \underline{\hspace{1cm}} 0$

A) $2 < 0$

B) $2 > 0$

Answer: B

54) $0 \underline{\hspace{1cm}} -8$

A) $0 > -8$

B) $0 < -8$

Answer: A

55) $-20 \underline{\hspace{1cm}} 0$

A) $-20 < 0$

B) $-20 > 0$

Answer: A

56) $-5 \underline{\hspace{1cm}} 6$

A) $-5 > 6$

B) $-5 < 6$

Answer: B

57) $65 \underline{\hspace{1cm}} -28$

A) $65 < -28$

B) $65 > -28$

Answer: B

58) $-71 \underline{\hspace{1cm}} -41$

A) $-71 > -41$

B) $-71 < -41$

Answer: B

59) $6.4 \underline{\hspace{1cm}} 0.6$

A) $6.4 > 0.6$

B) $6.4 < 0.6$

Answer: A

60) $0.444 \underline{\hspace{1cm}} 1$

A) $0.444 > 1$

B) $0.444 < 1$

Answer: B

61) $-9.01 \underline{\hspace{1cm}} -9.07$

A) $-9.01 > -9.07$

B) $-9.01 < -9.07$

Answer: A

62) $-\frac{8}{7} \underline{\hspace{1cm}} -\frac{5}{7}$

A) $-\frac{8}{7} > -\frac{5}{7}$

B) $-\frac{8}{7} < -\frac{5}{7}$

Answer: B

63) -5 _____ $-\frac{9}{5}$

A) $-5 > -\frac{9}{5}$

B) $-5 < -\frac{9}{5}$

Answer: B

64) $\frac{14}{22}$ _____ $\frac{2}{3}$

A) $\frac{14}{22} > \frac{2}{3}$

B) $\frac{14}{22} < \frac{2}{3}$

Answer: B

Write an inequality with the same meaning.

65) $26 < 28$

A) $28 \geq 26$

B) $28 > 26$

C) $26 > 28$

D) $28 < 26$

Answer: B

66) $41 \geq 1$

A) $41 > 1$

B) $41 \leq 1$

C) $1 \leq 41$

D) $1 \geq 41$

Answer: C

67) $-3 \leq x$

A) $x \geq -3$

B) $x > -3$

C) $-3 \geq x$

D) $x \leq -3$

Answer: A

68) $y > 24$

A) $y < 24$

B) $y \geq 24$

C) $24 > y$

D) $24 < y$

Answer: D

Determine whether the statement is true or false.

69) $5 < 3$

A) False

B) True

Answer: A

70) $8 > 5$

A) True

B) False

Answer: A

71) $5 \leq 12$

A) True

B) False

Answer: A

72) $-25 > -14$

A) False

B) True

Answer: A

73) $-20 \leq -13$

A) False

B) True

Answer: B

Find the absolute value.

74) $|18|$

A) 18

B) 0

C) -18

D) 36

Answer: A

75) $|-12|$

A) 0

B) -12

C) 24

D) 12

Answer: D

76) $|125|$

A) 250

B) 125

C) -125

D) 0

Answer: B

77) $|-24.6|$

A) 49.2

B) 24.6

C) 0

D) -24.6

Answer: B

78) $|-6.875|$

A) 0

B) -13.75

C) 6.875

D) -6.875

Answer: C

79) $|-0.006|$

A) 0.006

B) 0.012

C) 0

D) -0.006

Answer: A

80) $\left|-\frac{1}{2}\right|$

A) $\frac{1}{2}$

B) 1

C) 0

D) $-\frac{1}{2}$

Answer: A

81) $\left|\frac{0}{20}\right|$

A) 0

B) -20

C) 20

D) undefined

Answer: A

82) $\left|\frac{2}{3}\right|$

A) 0

B) $\frac{4}{3}$

C) $\frac{2}{3}$

D) $-\frac{2}{3}$

Answer: C

83) $\left|-8\frac{3}{10}\right|$

A) 0

B) $-8\frac{3}{10}$

C) $8\frac{3}{10}$

D) $-16\frac{3}{10}$

Answer: C

Add. Do not use a number line except as a check.

84) $5 + (-4)$

A) -1

B) -9

C) 9

D) 1

Answer: D

85) $-9 + 8$

A) 17

B) -1

C) 1

D) -17

Answer: B

86) $7 + (-35)$

A) -28

B) 28

C) -42

D) 42

Answer: A

87) $-71 + 34$

A) -105

B) -37

C) 105

D) 37

Answer: B

88) $5 + -5$

A) -5

B) 10

C) 0

D) 5

Answer: C

89) $-66 + 0$

A) -660

B) -66

C) 0

D) 66

Answer: B

90) $-65 + (-29)$

A) -94

B) -36

C) 94

D) 36

Answer: A

91) $53 + (-26)$

A) -79

B) 27

C) 79

D) -27

Answer: B

92) $-18 + (-39) + 31 + (-85)$

A) 59

B) -75

C) -111

D) -173

Answer: C

93) $426 + (-40) + 26 + (-492) + (-65) + 216$

A) 71

B) 201

C) -71

D) -1265

Answer: A

94) $-9.3 + 5.2$

A) 14.5

B) -14.5

C) -4.1

D) 4.1

Answer: C

95) $-1.7 + 6.8$

A) 8.5

B) -5.1

C) -8.5

D) 5.1

Answer: D

96) $-2.9 + (-7.9)$

A) 10.8

B) -5

C) -10.8

D) 5

Answer: C

97) $-8.1 + (-7.9)$

A) -16

B) 16

C) -0.2

D) 0.2

Answer: A

98) $2.1 + (-6.4)$

A) 4.3

B) -8.5

C) -4.3

D) 8.5

Answer: C

99) $8.3 + (-3.7)$

A) 8.3

B) 12

C) -12

D) 4.6

Answer: D

100) $-1.2 + (-4.1) + 3.4$

A) -0.5

B) 6.3

C) -8.7

D) -1.9

Answer: D

101) $-5.2 + (-1.5) + 10.4$

A) -3.7

B) -17.1

C) 6.7

D) 3.7

Answer: D

102) $-2.6 + (-6.8) + (-5.6) + 10$

A) 8.6

B) -5

C) 6.2

D) -11.4

Answer: B

103) $-46 + 7.7 + (-12.4) + (-21) + 52$

A) -10.3

B) 6.9

C) -19.7

D) -35.1

Answer: C

104) $-\frac{1}{5} + \frac{3}{5}$

A) $-\frac{4}{5}$

B) $\frac{4}{5}$

C) $\frac{2}{5}$

D) $-\frac{2}{5}$

Answer: C

105) $-\frac{1}{7} + \frac{3}{7}$

A) $-\frac{2}{7}$

B) $\frac{2}{7}$

C) $\frac{4}{7}$

D) $-\frac{4}{7}$

Answer: B

$$106) -\frac{1}{8} + \left(-\frac{5}{8}\right)$$

A) $\frac{1}{2}$

B) $-\frac{3}{4}$

C) $\frac{3}{4}$

D) $-\frac{1}{2}$

Answer: B

$$107) -\frac{5}{9} + \left(-\frac{4}{9}\right)$$

A) 1

B) - 1

C) $\frac{1}{9}$

D) $-\frac{1}{9}$

Answer: B

$$108) -\frac{3}{6} + \frac{2}{3}$$

A) $-\frac{7}{6}$

B) $\frac{1}{6}$

C) $\frac{2}{3}$

D) $\frac{7}{6}$

Answer: B

$$109) -\frac{3}{5} + \frac{7}{15}$$

A) $\frac{16}{15}$

B) $\frac{2}{15}$

C) $-\frac{16}{15}$

D) $-\frac{2}{15}$

Answer: D

$$110) -\frac{5}{8} + \left(-\frac{1}{5}\right)$$

A) $-\frac{33}{13}$

B) $-\frac{33}{40}$

C) $-\frac{6}{13}$

D) $\frac{17}{40}$

Answer: B

$$111) -\frac{1}{14} + \frac{8}{21}$$

A) $\frac{11}{21}$

B) $\frac{1}{3}$

C) $\frac{13}{42}$

D) $\frac{13}{21}$

Answer: C

$$112) -4 + \left(-\frac{7}{10}\right) + \frac{1}{10}$$

A) $-\frac{24}{5}$

B) $-\frac{23}{5}$

C) - 1

D) -46

Answer: B

113) $-98 + \left(-\frac{5}{9}\right) + 49 + \left(-\frac{4}{9}\right)$

A) - 50

B) $-\frac{58}{9}$

C) 48

D) - 48

Answer: A

Find the opposite, or additive inverse.

114) 30

A) 30

B) $\frac{1}{30}$

C) 0

D) -30

Answer: D

115) -22

A) -22

B) $\frac{1}{22}$

C) 22

D) 0

Answer: C

116) 26.7

A) 26.7

B) -26.7

C) $\frac{1}{26.7}$

D) 0

Answer: B

117) $-\frac{1}{3}$

A) $\frac{1}{3}$

B) 3

C) -3

D) $-\frac{1}{3}$

Answer: A

118) $\frac{17}{6}$

A) $-\frac{17}{6}$

B) $-\frac{6}{17}$

C) $\frac{17}{6}$

D) $\frac{6}{17}$

Answer: A

Evaluate -x for the given value of x.

119) $x = 2$

A) 0

B) -2

C) -3

D) 2

Answer: B

120) $x = -7.2$

A) 7.2

B) $-\frac{1}{7.2}$

C) -7.2

D) 0

Answer: A

121) $x = 32.1$

A) $\frac{10}{321}$

B) 32

C) 32.1

D) -32.1

Answer: D

$$132) x = \frac{1}{2}$$

A) 0

B) 2

C) $\frac{1}{2}$

D) $-\frac{1}{2}$

Answer: C

$$133) x = -\frac{1}{47}$$

A) 47

B) $\frac{1}{47}$

C) -47

D) $-\frac{1}{47}$

Answer: D

$$134) x = \frac{11}{9}$$

A) $-\frac{11}{9}$

B) $\frac{9}{11}$

C) $\frac{11}{9}$

D) $-\frac{9}{11}$

Answer: C

$$135) x = -\frac{29}{48}$$

A) $-\frac{48}{29}$

B) $-\frac{29}{48}$

C) $\frac{48}{29}$

D) $\frac{29}{48}$

Answer: B

$$136) x = 1.46$$

A) $\frac{146}{10}$

B) 146

C) -1.46

D) 1.46

Answer: D

$$137) x = -32.40$$

A) 32.4

B) 0.03

C) -32.40

D) -0.03

Answer: C

$$138) x = -0.561$$

A) -1

B) 0.561

C) -0.561

D) 0

Answer: C

Solve the problem.

139) The stock market gained 57 points on Tuesday and lost 45 points on Wednesday. It had closed on Monday at 2783 points. Where did the market close on Wednesday?

A) 2795 points

B) 2885 points

C) 2681 points

D) 2771 points

Answer: A

140) During one year 37 new employees began work at Daniel's Manufacturing Company and 14 employees left. At the beginning of the year there were 400 employees. What was the number of employees at the end of the year?

A) 451 employees

B) 349 employees

C) 423 employees

D) 437 employees

Answer: C

141) A football team gained 30 yards on one play, lost 33 yards on another, and gained 17 yards on the last play of the first half. They had already gained 385 yards during the half. What was the total yardage gain for the first half?

- A) 371 yards B) 432 yards C) 399 yards D) 465 yards

Answer: C

142) Annica owes \$646.91 on her charge card. She returns for credit items costing \$37.22 and \$48.94. She makes a purchase for \$32.39 and additional purchases of \$15.05, \$104.25, and \$132.39. She then makes a payment of \$546.56. Find the amount she now owes.

- A) \$823.23 B) \$995.55 C) \$470.59 D) \$298.27

Answer: D

143) A machinist has flat metal plate that is 8.546 cm thick. He laminates the metal plate with four more layers that are 1.055 cm, 3.990 cm, 3.931 cm, and 3.474 cm thick. He then grinds off 4.300 cm from the top of the plate, then 1.576 cm more, and finally another 6.277 cm. Find the new thickness of the plate.

- A) 8.249 cm B) 20.595 cm C) 13.143 cm D) 8.843 cm

Answer: D

144) In four rounds of a card game, you get scores of 9, -6, 6, and -3. What is your final score?

- A) -6 B) 6 C) 24 D) -24

Answer: B

145) A bike road race starts at an elevation of 620 feet and passes through 5 stages where the elevation changes by -43 feet, 180 feet, 530 feet, -376 feet, and 459 feet. At what elevation does the race end?

- A) 566 feet B) 1370 feet C) 2208 feet D) -2208 feet

Answer: B

146) The attendance at 3 games of a major sporting event fluctuated above and below the average according to the following table. What was the net change from the average attendance after these three games?

Game	Gain/Loss in Attendance
#1	-3500
#2	5911
#3	-2041

- A) 370 B) -11,452 C) -7370 D) 4452

Answer: A

147) Monday's closing value of your company's stock was up $\frac{1}{8}$. Tuesday's was up $\frac{1}{2}$, Wednesday's was down $\frac{1}{8}$,

but Thursday's closing was up again by $\frac{1}{8}$. Finally, the stock closed the week down $\frac{1}{4}$. What was the net change

for the week?

- A) $\frac{5}{8}$ B) $\frac{3}{8}$ C) $\frac{9}{8}$ D) $-\frac{5}{8}$

Answer: B

Subtract.

148) $0 - 22$

A) 22

B) 0

C) -22

D) $\frac{1}{22}$

Answer: C

149) $8 - 12$

A) 20

B) -4

C) -20

D) 4

Answer: B

150) $-10 - 5$

A) -5

B) 15

C) 5

D) -15

Answer: D

151) $6 - (-11)$

A) 17

B) 5

C) -17

D) -5

Answer: A

152) $-11 - (-17)$

A) -28

B) -11

C) 6

D) -6

Answer: C

153) $-19 - (-14)$

A) -33

B) 5

C) -5

D) 33

Answer: C

154) $76 - (-40)$

A) -36

B) -116

C) 36

D) 116

Answer: D

155) $-803 - (-857)$

A) 1660

B) -1660

C) 54

D) -54

Answer: C

156) $-5 - (-5)$

A) 1

B) 0

C) 5

D) -5

Answer: B

157) $0 - (-5)$

A) -5

B) -4

C) 0

D) 5

Answer: D

158) $\frac{6}{19} - \frac{8}{19}$

A) $\frac{2}{19}$

B) $-\frac{2}{19}$

C) $-\frac{2}{361}$

D) -2

Answer: B

159) $\frac{3}{5} - \frac{1}{15}$

A) $\frac{2}{3}$

B) $\frac{1}{5}$

C) $\frac{8}{15}$

D) $\frac{2}{15}$

Answer: C

160) $\frac{1}{5} - \frac{2}{5}$

A) $\frac{3}{5}$

B) $-\frac{3}{5}$

C) $\frac{1}{5}$

D) $-\frac{1}{5}$

Answer: D

161) $-\frac{3}{8} - \frac{2}{5}$

A) $-\frac{5}{13}$

B) $-\frac{31}{13}$

C) $-\frac{31}{40}$

D) $-\frac{1}{40}$

Answer: C

162) $\frac{2}{9} - \left(-\frac{3}{4}\right)$

A) $-\frac{35}{36}$

B) $-\frac{19}{36}$

C) $-\frac{1}{9}$

D) $\frac{35}{36}$

Answer: D

163) $\frac{5}{6} - \left(\frac{9}{2}\right)$

A) $-\frac{3}{11}$

B) $-\frac{7}{6}$

C) $\frac{22}{3}$

D) $-\frac{11}{3}$

Answer: D

164) $\frac{10}{8} - \frac{10}{8}$

A) $-\frac{50}{8}$

B) $\frac{50}{8}$

C) undefined

D) 0

Answer: D

165) $-14.3 - 0$

A) 14.3

B) 0

C) undefined

D) -14.3

Answer: D

166) $-0.42 - 4$

A) -4.42

B) 4.42

C) -3.58

D) 3.58

Answer: A

167) $-5.4 - 12.0$

A) -17.4

B) 6.6

C) 17.4

D) -6.6

Answer: A

- 168) $-3.8 - (-4.9)$
 A) -8.7 B) -1.1 C) 1.1 D) 8.7
 Answer: C
- 169) $0.97 - 0.81$
 A) -1.68 B) 0.16 C) 0.7857 D) -1.78
 Answer: B
- 170) $0.75 - (-0.02)$
 A) 0.77 B) 0.73 C) 0.87 D) 0.015
 Answer: A
- 171) $0.91 - (-7.118)$
 A) 8.128 B) 6.477 C) 6.208 D) 8.028
 Answer: D
- 172) $5.769 - (-0.52)$
 A) 3.000 B) 6.289 C) 5.249 D) 6.389
 Answer: B
- 173) $68.32 - 40$
 A) 28.32 B) 28.82 C) 28.42 D) 108.32
 Answer: A
- 174) $37 - 13.20$
 A) 23.79 B) 23.80 C) 23.90 D) 23.70
 Answer: B
- Simplify.
- 175) $17 + (-8) - (-20)$
 A) 5 B) 29 C) -11 D) -29
 Answer: B
- 176) $-7 + 6 - 20 - (-8)$
 A) -13 B) -29 C) -1 D) 11
 Answer: A
- 177) $1 - 0 - 18 - (-2) + (-19)$
 A) -2 B) -34 C) -38 D) 36
 Answer: B
- 178) $7 + (-4) - (-18) - 1 + 20$
 A) 40 B) -26 C) 6 D) 42
 Answer: A
- 179) $-19 + (-10) + (-9) + (-5) + 10 + (-2)$
 A) 3 B) 21 C) -35 D) -55
 Answer: C

180) $13 + (-14) + 15 + (-19) + 13 + (-8)$

A) -30

B) 0

C) -2

D) -82

Answer: B

181) $3.1 - (-16.1) - (-17.0)$

A) 4.0

B) -36.2

C) 36.2

D) -30.0

Answer: C

182) $\frac{1}{4} - \left(-\frac{5}{16}\right) + \frac{1}{2} - \frac{1}{8}$

A) $\frac{15}{16}$

B) $\frac{1}{5}$

C) $-\frac{5}{16}$

D) $\frac{5}{16}$

Answer: A

183) $\frac{1}{3} - \frac{13}{42} + \frac{4}{21} - \frac{5}{42}$

A) $\frac{2}{21}$

B) $\frac{20}{21}$

C) $\frac{1}{42}$

D) $\frac{1}{21}$

Answer: A

184) $-\frac{19}{24} + \frac{4}{9} - \left(-\frac{1}{6}\right) + \frac{1}{3}$

A) $-\frac{13}{72}$

B) $\frac{11}{72}$

C) $\frac{101}{72}$

D) $\frac{11}{60}$

Answer: B

Solve the problem.

185) The stock market gained 36 points on Tuesday and lost 21 points on Wednesday. Find the difference between these changes.

A) 15 points

B) -57 points

C) -15 points

D) 57 points

Answer: D

186) Nikki is fishing from a bank 22 feet above water level. In this location, the fish tend to feed at 45 feet below the surface. How long must Nikki's fish line be to reach the fish?

A) -23 feet

B) 23 feet

C) -22 feet

D) 67 feet

Answer: D

187) Wayne has \$30.72 in his wallet. Janice has a debt note for \$20.00 in her wallet. Find the difference between these amounts.

A) \$50.72

B) -\$50.72

C) -\$10.72

D) \$10.72

Answer: A

188) Company A showed a profit of \$80,640 last year, while Company B had a loss of \$89,520. Find the difference between these amounts.

A) \$8880

B) \$170,160

C) -\$170,160

D) -\$8880

Answer: B

189) The temperature at the South pole was 49° at 8 am. At 3 pm, it was -43° . By how many degrees did the temperature drop?

- A) -92° B) -6° C) 6° D) 92°

Answer: D

190) The ocean surface is at 0 ft elevation. A diver is underwater at an elevation of -176 ft near a rock formation. In this area, the ocean floor has an elevation of -368 ft. The rock formation rises to a peak 247 ft above the ocean floor. How many feet below the top of the rock formation is the diver?

- A) 192 ft B) 55 ft C) 71 ft D) 121 ft

Answer: B

191) After one round in a card game, your score was -40 points. After the second round, your score was 47 points. How many points did you gain in the second game?

- A) 7 points B) 47 points C) -7 points D) 87 points

Answer: D

192) In a certain location, the highest temperature recorded was 100°F . The lowest temperature recorded was 126 degrees less than the highest. What was the lowest temperature?

- A) -138°F B) 26°F C) 0°F D) -26°F

Answer: D

193) The two charts show the weight gain of some people and the weight loss of other people. Use the information given to answer the question below.

Weight gain (in gms)		Weight loss (in gms)	
Abe	3,051	Don	-2,958
Bob	4,208	Ed	-2,177
Carl	1,695	Frank	-857

What is the difference between the weight gain of Abe and the weight loss of Frank?

- A) -2194 grams B) 2194 grams C) -3908 grams D) 3908 grams

Answer: D

Multiply.

194) $-5 \cdot (-16)$

- A) -85 B) 96 C) 80 D) 85

Answer: C

195) $-4 \cdot 5$

- A) -25 B) -16 C) 16 D) -20

Answer: D

196) $-9 \cdot (-9)$

- A) -81 B) -90 C) 90 D) 81

Answer: D

197) $-10 \cdot (-6)$

- A) 70 B) -70 C) 60 D) 66

Answer: C

- 198) $-6 \cdot (-9) \cdot (-8)$
 A) -23 B) 62 C) 432 D) -432
 Answer: D
- 199) $-10 \cdot (-9) \cdot 5 \cdot (-13)$
 A) 5850 B) 463 C) -27 D) -5850
 Answer: D
- 200) $-6 \cdot (-10) \cdot (-3) \cdot 10 \cdot (-8)$
 A) -17 B) -14,400 C) 14,400 D) -1792
 Answer: C
- 201) $4 \cdot (-7) \cdot 4 \cdot (-8) \cdot 7 \cdot (-4) \cdot (-5)$
 A) 125,440 B) -9 C) -125,440 D) -25,083
 Answer: A
- 202) $(-1)^6$
 A) 1 B) -1 C) -6 D) 6
 Answer: A
- 203) $(-1)^9$
 A) 1 B) -1 C) 9 D) -9
 Answer: B
- 204) $-0.8 \cdot (-0.4)$
 A) 0.4 B) -1.1 C) -1.2 D) 0.32
 Answer: D
- 205) $-0.2 \cdot 7.98$
 A) 7.78 B) -1.596 C) 8.18 D) 1.596
 Answer: B
- 206) $2.9 \cdot (-2.03)$
 A) 4.93 B) -5.887 C) 5.03 D) 0.87
 Answer: B
- 207) $-3.1 \cdot (-12)$
 A) -15.1 B) 37.2 C) -8.9 D) 15.1
 Answer: B
- 208) $-1.07 \cdot (-2.3)$
 A) -3.37 B) -1.23 C) 2.461 D) 3.37
 Answer: C
- 209) $-0.3 \cdot (-15.3)$
 A) -15.6 B) 4.59 C) 15.6 D) -15
 Answer: B

210) $34 \cdot (-4.41)$

A) 38.51

B) 29.59

C) -149.94

D) 38.41

Answer: C

211) $-4 \cdot (-0.4) \cdot 4$

A) 6.4

B) 64

C) -6.4

D) -64

Answer: A

212) $80 \cdot (-1.8) \cdot 8 \cdot (-0.08)$

A) -921.6

B) 92.16

C) -92.16

D) 921.6

Answer: B

213) $\frac{5}{6} \cdot \frac{5}{7}$

A) $\frac{6}{7}$

B) $\frac{25}{42}$

C) $\frac{10}{13}$

D) $\frac{42}{25}$

Answer: B

214) $\left(-\frac{1}{3}\right) \cdot \left(-\frac{1}{5}\right)$

A) $\frac{1}{10}$

B) $\frac{1}{15}$

C) $\frac{3}{5}$

D) $-\frac{3}{11}$

Answer: B

215) $\left(-\frac{4}{3}\right) \left(-\frac{4}{3}\right)$

A) $-\frac{4}{9}$

B) 1

C)

D) $\frac{16}{9}$

Answer: D

216) $\left(\frac{3}{8}\right) \left(-\frac{19}{20}\right)$

A) $\frac{3}{160}$

B) $-\frac{4}{7}$

C) $-\frac{57}{160}$

D) $-\frac{38}{15}$

Answer: C

217) $\left(-\frac{7}{15}\right) \left(\frac{14}{27}\right)$

A) $-\frac{10}{9}$

B) $\frac{7}{405}$

C) $-\frac{98}{405}$

D) $-\frac{28}{3}$

Answer: C

218) $\left(-\frac{5}{9}\right) \left(-\frac{5}{9}\right)$

A) $-\frac{5}{9}$

B) $\frac{5}{243}$

C) 1

D) $\frac{25}{81}$

Answer: D

$$219) \left(\frac{20}{17}\right)\left(-\frac{19}{7}\right)$$

A) $\frac{39}{10}$

B) $-\frac{380}{119}$

C) $\frac{20}{119}$

D) $-\frac{323}{140}$

Answer: B

$$220) \left(\frac{3}{7}\right) \cdot \left(\frac{5}{9}\right) \cdot \left(-\frac{1}{8}\right)$$

A) $-\frac{5}{168}$

B) $\frac{1}{168}$

C) $\frac{7}{24}$

D) $\frac{5}{21}$

Answer: A

$$221) \left(\frac{10}{17}\right)\left(-\frac{11}{16}\right)\left(\frac{2}{5}\right)$$

A) $-\frac{55}{136}$

B) $\frac{1}{544}$

C) $-\frac{11}{68}$

D) $-\frac{13}{19}$

Answer: C

Evaluate the expression for the given value of x.

$$222) -3x^2, x = 4$$

A) 144

B) 24

C) 48

D) -48

Answer: D

$$223) (-5x)^2, x = 5$$

A) 125

B) -125

C) 625

D) -625

Answer: C

$$224) 4x^3, x = 2$$

A) -32

B) 24

C) 512

D) 32

Answer: D

$$225) 2x^3, x = -1$$

A) -8

B) -6

C) 2

D) -2

Answer: D

Solve the problem.

226) If a garage charges \$27 for an oil change, how much will it take in if oil is changed on 21 cars?

A) \$567

B) \$48

C) \$57

D) \$576

Answer: A

227) Sergey averages 15 miles per gallon of gasoline in his car. How far can he travel on 19 gallons of gasoline?

A) 34 miles

B) 285 miles

C) 40 miles

D) 291 miles

Answer: B

228) If a roll of wallpaper costs \$36, how much will 8 rolls cost?

A) \$288

B) \$50

C) \$44

D) \$294

Answer: A

- 229) A stockbroker sold 15 shares of stock for \$25.01 each. What was the total amount of the sale?
A) \$375.05 B) \$375.25 C) \$375.15 D) \$375.26

Answer: C

- 230) John earns \$9.69/hour. If he works 10 hours, how much will he earn?
A) \$96.90 B) \$98.00 C) \$97.00 D) \$96.91

Answer: A

- 231) A population of a rural town was 19,000. It decreased 350 each year for 6 yr. What was the population of the town after 6 yr?
A) 17,250 B) 16,900 C) 21,100 D) 16,550

Answer: B

Divide, if possible.

- 232) $\frac{12}{-2}$
A) -6 B) -5 C) 6 D) -7

Answer: A

- 233) $-40 \div (-8)$
A) 6 B) -6 C) 5 D) -5

Answer: C

- 234) $\frac{-24}{3}$
A) -18 B) -8 C) $-\frac{1}{8}$ D) 8

Answer: B

- 235) $-105 \div 5$
A) 21 B) $-\frac{1}{21}$ C) -31 D) -21

Answer: D

- 236) $\frac{50}{-2}$
A) -35 B) -25 C) $-\frac{1}{25}$ D) 25

Answer: B

- 237) $-120 \div (-8)$
A) 5 B) $\frac{1}{15}$ C) 15 D) -15

Answer: C

238) $\frac{60}{-30}$

A) -12

B) 2

C) -2

D) $-\frac{1}{2}$

Answer: C

239) $\frac{-162}{-81}$

A) -2

B) 2

C) -9

D) $\frac{1}{2}$

Answer: B

240) $\frac{-36}{0}$

A) 0

B) 1

C) 36

D) Not defined

Answer: D

241) $\frac{0}{-49}$

A) 0

B) Not defined

C) 49

D) 1

Answer: A

Find the reciprocal, if it exists.

242) 13

A) 1

B) $-\frac{1}{13}$

C) -13

D) $\frac{1}{13}$

Answer: D

243) -3

A) 0

B) $\frac{1}{3}$

C) $-\frac{1}{3}$

D) 3

Answer: C

244) $\frac{5}{3}$

A) $\frac{3}{5}$

B) 1

C) $-\frac{3}{5}$

D) $-\frac{5}{3}$

Answer: A

245) $-\frac{3}{5}$

A) $\frac{3}{5}$

B) $\frac{5}{3}$

C) 1

D) $-\frac{5}{3}$

Answer: D

246) 0

A) 0

B) 1

C) No reciprocal

Answer: C

247) $\frac{1}{2.3}$

A) $\frac{2.3}{0}$

B) -2.3

C) 1

D) 2.3

Answer: D

248) -2.7

A) 2.7

B) $-\frac{2.7}{0}$

C) 1

D) $-\frac{1}{2.7}$

Answer: D

249) $\frac{1}{7x}$

A) 7x

B) $\frac{7}{x}$

C) $\frac{x}{7}$

D) No reciprocal

Answer: A

250) $\frac{-1}{7y}$

A) $-\frac{y}{7}$

B) $-\frac{7}{y}$

C) 7y

D) -7y

Answer: D

251) $\frac{4x}{5y}$

A) $\frac{5x}{4y}$

B) $\frac{4x}{5y}$

C) $\frac{5y}{4x}$

D) $\frac{4y}{5x}$

Answer: C

252) $\frac{5b}{-8a}$

A) $-\frac{8a}{5b}$

B) $-\frac{5b}{8a}$

C) $-\frac{8b}{5a}$

D) $-\frac{5a}{8b}$

Answer: A

Rewrite the division as a multiplication.

253) $9 \div 25$

A) $-9 \cdot 25$

B) $9 \cdot \frac{1}{25}$

C) $9 \cdot -25$

D) $25 \cdot \frac{1}{9}$

Answer: B

254) $\frac{5}{-8}$

A) $5 \cdot \left(-\frac{1}{8}\right)$

B) $5 \cdot 8$

C) $-5 \cdot -8$

D) $-5 \cdot \frac{1}{5}$

Answer: A

255) $-\frac{9}{12}$

A) $-9 \cdot 12$ or $9 \cdot -12$

B) $-12 \cdot \left(\frac{1}{9}\right)$ or $12 \cdot \left(-\frac{1}{9}\right)$

C) $-9 \cdot \left(\frac{1}{12}\right)$ or $9 \cdot \left(-\frac{1}{12}\right)$

D) $-9 \cdot -12$ or $9 \cdot 12$

Answer: C

256) $\frac{28.2}{-2.5}$

A) $28.2 \cdot \left(-\frac{1}{2.5}\right)$

B) $-28.2 \cdot 2.5$

C) $28.2 \cdot 2.5$

D) $28.2 \left(\frac{1}{2.5}\right)$

Answer: A

257) $\frac{24}{\frac{1}{a}}$

A) $24 \cdot \frac{1}{a}$

B) $\frac{1}{24} \cdot a$

C) $24 \cdot a$

D) $\frac{1}{24} \cdot \frac{1}{a}$

Answer: C

258) $\frac{2x+7}{8}$

A) $(2x+7) \left(\frac{1}{8}\right)$

B) $8 \left(\frac{1}{2x+7}\right)$

C) $(2x+7)(-8)$

D) $(2x+7) \left(-\frac{1}{8}\right)$

Answer: A

Divide.

259) $\frac{3}{4} \div \left(-\frac{6}{7}\right)$

A) $-\frac{14}{9}$

B) $-\frac{7}{8}$

C) $-\frac{9}{14}$

D) $-\frac{8}{7}$

Answer: B

260) $\frac{2}{9} \div \left(-\frac{9}{4}\right)$

A) $-\frac{8}{81}$

B) $-\frac{81}{8}$

C) $-\frac{1}{2}$

D) -2

Answer: A

$$261) \frac{7}{3} \div \left(-\frac{1}{6} \right)$$

A) -14

B) $-\frac{18}{7}$

C) $-\frac{1}{14}$

D) $-\frac{7}{18}$

Answer: A

$$262) -\frac{9}{16} \div \left(-\frac{16}{9} \right)$$

A) $-\frac{81}{256}$

B) 1

C) -1

D) $\frac{81}{256}$

Answer: D

$$263) \frac{4}{0.8}$$

A) 3.2

B) $\frac{1}{5}$

C) 32

D) 5

Answer: D

$$264) \frac{-2.5}{0.5}$$

A) -2

B) $-\frac{1}{5}$

C) -20

D) -5

Answer: D

$$265) \frac{2.4}{0.08}$$

A) 2.32

B) 30

C) 23.2

D) $\frac{1}{30}$

Answer: B

$$266) -4.5 \div 0.09$$

A) -50

B) $\frac{1}{50}$

C) -44.1

D) -4.41

Answer: A

$$267) \frac{-24}{4 - 4}$$

A) -3

B) 0

C) -24

D) Undefined

Answer: D

$$268) \frac{-52}{-9 - (-5)}$$

A) 4

B) -4

C) 13

D) -13

Answer: C

Solve the problem.

269) In Smithville, there were 232 teachers in 1990 and 320 teachers in 2000. Find the percent of increase in the number of teachers in Smithville during this time period. Round to the nearest tenth of a percent.

- A) 37.9% B) 41.7% C) 27.5% D) 45.5%

Answer: A

270) Clearwater Community College had 1225 students enrolled in 1998 and 982 students enrolled in 1999. Find the percent of decrease in the number of students from 1998 to 1999. Round to the nearest tenth of a percent.

- A) -17.9% B) -19.8% C) -15.9% D) -24.7%

Answer: B

Find an equivalent expression with the given denominator.

271) $\frac{5}{6} = \frac{?}{6y}$

- A) $\frac{5y}{6y}$ B) $\frac{y}{6y}$ C) $\frac{5}{6y}$ D) $\frac{30}{6y}$

Answer: A

272) $\frac{4}{5} = \frac{?}{15x}$

- A) $\frac{4x}{15x}$ B) $\frac{9x}{15x}$ C) $\frac{12x}{15x}$ D) $\frac{12}{15x}$

Answer: C

273) $\frac{3}{7y} = \frac{?}{7y^2}$

- A) $\frac{3y^2}{7y^2}$ B) $\frac{3y}{7y^2}$ C) $\frac{y}{7y^2}$ D) $\frac{21y}{7y^2}$

Answer: B

274) $\frac{2}{5x} = \frac{?}{5xy}$

- A) $\frac{2y}{5xy}$ B) $\frac{y}{5xy}$ C) $\frac{10y}{5xy}$ D) $\frac{2xy}{5xy}$

Answer: A

Simplify.

275) $-\frac{54t}{30t}$

- A) $\frac{9t}{5}$ B) $\frac{9}{5}$ C) $-\frac{9}{5}$ D) $-\frac{9t}{5}$

Answer: C

276) $\frac{52xy}{39xy}$

A) $\frac{4}{3}$

B) $\frac{4xy}{3}$

C) $-\frac{4}{3}$

D) $-\frac{4xy}{3}$

Answer: A

277) $\frac{7xy}{12xy}$

A) $\frac{7x}{12x}$

B) $\frac{7}{12}$

C) $\frac{y}{12y}$

D) $\frac{1}{12}$

Answer: B

278) $\frac{12yz}{13z}$

A) $-\frac{y}{8z}$

B) $-\frac{12}{8y}$

C) $\frac{12y}{13}$

D) $\frac{y}{8z}$

Answer: C

279) $\frac{3a}{5ab}$

A) $\frac{3b}{5}$

B) $\frac{3a}{5}$

C) $\frac{3}{5b}$

D) $\frac{1}{5b}$

Answer: C

280) $\frac{14mn}{10n}$

A) $\frac{14m}{10}$

B) $\frac{7}{5}m$

C) $-\frac{5}{7}n$

D) $\frac{2}{5}m$

Answer: B

281) $\frac{-35mn}{49mn}$

A) $\frac{-7n}{5m}$

B) $\frac{5}{7}m$

C) $\frac{5}{49}$

D) $-\frac{5}{7}$

Answer: D

282) $\frac{48a}{96a}$

A) $\frac{1}{24}a$

B) $\frac{1}{2}a$

C) 12

D) $\frac{1}{2}$

Answer: D

Write an equivalent expression. Use a commutative law.

283) $2 + b$

A) b^2

B) $2(1 + b)$

C) $2b$

D) $b + 2$

Answer: D

284) $y + 16$

A) $16 + y$

B) $16(y + 1)$

C) $y16$

D) $16y$

Answer: A

285) $4 + xy$

A) $xy + 4$, or $4 + yx$

B) $4 + x + y$

C) $4xy$, or $4yx$

D) $4(1 + xy)$

Answer: A

286) wx

A) $w \div x$

B) xw

C) $w + x$

D) $\frac{1}{wx}$

Answer: B

287) $pq + z$

A) $qp + z$, or $z + pq$

B) pqz , or $p + q + z$

C) $pq - z$

D) $z - pq$

Answer: A

Write an equivalent expression. Use an associative law.

288) $(x + 3) + y$

A) $y + (x + 3)$

B) $(3 + x) + y$

C) $x(3 + y)$

D) $x + (3 + y)$

Answer: D

289) $3 + (s + t)$

A) $(s + t) + 3$

B) $(3 + s) + t$

C) $3 + (t + s)$

D) $3(s + t)$

Answer: B

290) $(8 + u) + v$

A) $(8 + v) + u$

B) $v + (8 + u)$

C) $8 + (u + v)$

D) $(u + 8) + v$

Answer: C

291) $a + (b + 2)$

A) $(b + 2) + a$

B) $a(b + 2)$

C) $a + (2 + b)$

D) $(a + b) + 2$

Answer: D

292) $r + (7 + s)$

A) $(7 + s) + r$

B) $r(7 + s)$

C) $r + (s + 7)$

D) $(r + 7) + s$

Answer: D

293) $(3x)y$

A) $3(xy)$

B) $3x + 3y$

C) $(3y)x$

D) $(x3)y$

Answer: A

294) $2(ab)$

A) $2a + 2b$

B) $2(ba)$

C) $a(2b)$

D) $(2a)b$

Answer: D

295) $(5s)t$

A) $5s + 5t$

B) $(s5)t$

C) $5(st)$

D) $t(5s)$

Answer: C

296) $6(np)$

A) $(6n)p$

B) $6(n + p)$

C) $6(pn)$

D) $6n + 6p$

Answer: A

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

Use the commutative and/or associative laws to rewrite the given expression. Label each step with a reason.

297) $(x + 6) + y$ as $6 + (x + y)$

Answer: $(x + 6) + y = (6 + x) + y$ Using the commutative law
 $= 6 + (x + y)$ Using the associative law

298) $8 + (a + b)$ as $b + (8 + a)$

Answer: $8 + (a + b) = (8 + a) + b$ Using the associative law
 $= b + (8 + a)$ Using the commutative law

299) $x(y2)$ as $2(xy)$

Answer: $x(y2) = (xy)2$ Using the associative law
 $= 2(xy)$ Using the commutative law

300) $(7)m$ as $7(m)$

Answer: $(7)m = (7)m$ Using the commutative law
 $= 7(m)$ Using the associative law

301) $s(t3)$ as $3(ts)$

Answer: $s(t3) = (t3)s$ Using the commutative law
 $= (3t)s$ Using the commutative law
 $= 3(ts)$ Using the associative law

302) $(y + z) + 2$ as $(2 + z) + y$

Answer: $(y + z) + 2 = 2 + (y + z)$ Using the commutative law
 $= 2 + (z + y)$ Using the commutative law
 $= (2 + z) + y$ Using the associative law

303) $(6 + y) + 6$ as $y + 12$

Answer: $(6 + y) + 6 = (y + 6) + 6$ Using the commutative law
 $= y + (6 + 6)$ Using the associative law
 $= y + 12$ Simplifying

304) $(x + 4) + 4$ as $8 + x$

Answer: $(x + 4) + 4 = x + (4 + 4)$ Using the associative law
 $= x + 8$ Simplifying
 $= 8 + x$ Using the commutative law

305) $(2w)5$ as $10w$

Answer: $(2w)5 = 5(2w)$ Using the commutative law
 $= (5 \cdot 2)w$ Using the associative law
 $= 10w$ Simplifying

306) $(z^4)^8$ as $32z$

Answer: $(z^4)^8 = z(4 \cdot 8)$ Using the associative law
 $= z(32)$ Simplifying
 $= 32z$ Using the commutative law

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

Multiply.

307) $3(x + 6)$

A) $3x + 3$

B) $3x + 18$

C) $3x + 6$

D) $18x$

Answer: B

308) $3(2 + m)$

A) $6 + 3m$

B) $6 + 2m$

C) $6 + m$

D) $6m$

Answer: A

309) $9(a + b)$

A) $9a + b$

B) $9a + 9b$

C) $18ab$

D) $9ab$

Answer: B

310) $9(7x + 2)$

A) $63x + 2$

B) $7x + 18$

C) $63x + 18$

D) $126x$

Answer: C

311) $5(3 + 2s)$

A) $15 + 30s$

B) $3 + 10s$

C) $15 + 10s$

D) $15 + 2s$

Answer: C

312) $3(5x + 9y + 7)$

A) $15x + 9y + 21$

B) $15x + 27y + 7$

C) $15x + 9y + 7$

D) $15x + 27y + 21$

Answer: D

313) $5(6r + 9 + 6s)$

A) $30r + 9 + 30s$

B) $30r + 45 + 30s$

C) $30r + 9 + 6s$

D) $30r + 45 + 6s$

Answer: B

314) $-3.6(6.2x - 2.5y - 1.8)$

A) $-22.32x + 9y - 1.8$

B) $-22.32x - 9y - 6.48$

C) $-22.32x - 2.5y - 1.8$

D) $-22.32x + 9y + 6.48$

Answer: D

315) $\frac{5}{7}(a - b + 7)$

A) $\frac{5}{7}a - \frac{5}{7}b + 7$

B) $\frac{5}{7}a + \frac{5}{7}b + 35$

C) $\frac{5}{7}a - b + 7$

D) $\frac{5}{7}a - \frac{5}{7}b + 5$

Answer: D

List the terms of the expression.

316) $13x + 7y$

A) $13x, -7y$

B) $13x, 7y$

C) $13, x, 7, y$

D) $13, 7$

Answer: B

- 317) $-7x + 17y$
 A) $-7x, -17y$ B) $-7, x, 17, y$ C) $7x, 17y$ D) $-7x, 17y$
 Answer: D
- 318) $4 - 6a + 9b$
 A) $4, 6a, 9b$ B) $-6, 9b$ C) $4, -6, a, 9, b$ D) $4, -6a, 9b$
 Answer: D
- 319) $-6 + 6a - 6b$
 A) $-6, 6, a, -6, b$ B) $-6, 6a, -6b$ C) $6a, 6b$ D) $6, 6a, 6b$
 Answer: B
- 320) $-6 + 6m + 7mn$
 A) $-6, 6m, 7m, n$ B) $-6, 6m, 7mn$ C) $6m, 7mn$ D) $-6, 6m, 7m, 7n$
 Answer: B
- 321) $2 - 2x - 6xy - 6$
 A) $-2x, -6xy$ B) $2, -2x, -6, x, y, -6$ C) $-4, -2x, -6xy$ D) $2, -2x, -6xy, -6$
 Answer: D
- 322) $-1 + 6r - 4rt$
 A) $-1, 6r, -4r, t$ B) $1, 6r, 4rt$ C) $-1, 6r, -4rt$ D) $-1, 6r, 4rt$
 Answer: C
- 323) $11 - 4ab - 9b$
 A) $-11, -4, a, b, -9b$ B) $11, 4, a, b, 9$ C) $11, -4ab, -9b$ D) $11, 4ab, 9b$
 Answer: C
- 324) $-4 + 3a - 7b - 5ab$
 A) $-4, 3a, 7b, 5ab$ B) $-4, -3a, -7b, -5ab$ C) $-4, 3a, -7b, -5ab$ D) $-4, 3a, -7b, -5, ab$
 Answer: C
- Factor. Check by multiplying.
- 325) $3 + 3z$
 A) $3(0 + z)$ B) $3(1 + z)$ C) $3(3 + z)$ D) $3(1 + 3z)$
 Answer: B
- 326) $42a + 7b$
 A) $42(a + b)$ B) $7(6a + b)$ C) $7(6a + 7b)$ D) $6(7a + 7b)$
 Answer: B
- 327) $21x + 15$
 A) $21(x + 5)$ B) $21(x + 15)$ C) $3(7x + 5)$ D) $3(7x + 15)$
 Answer: C
- 328) $2x - 8y$
 A) $2(x - 8y)$ B) $2(x - 4y)$ C) $4(2x - 2y)$ D) $2(x - y)$
 Answer: B

329) $5m - 15n + 35$

A) $15(5m - n + 35)$

B) $5(m - 15n + 35)$

C) $5(m - 3n + 7)$

D) $5(m - 3n + 35)$

Answer: C

330) $10 + 5w + 25y$

A) $10(1 + 5w + 25y)$

B) $5(2 + w + 5y)$

C) $5(2 + w + 25y)$

D) $5(2 + 5w + 25y)$

Answer: B

331) $5s + 30 + 50t$

A) $5(s + 6 + 10t)$

B) $50(s + 6 + t)$

C) $5(s + 30 + 10t)$

D) $5(s + 30 + 50t)$

Answer: A

332) $3 + 15a + 18b$

A) $15(1 + a + b)$

B) $3(1 + 5a + 6b)$

C) $3(1 + 15a + 18b)$

D) $3(0 + 5a + 6b)$

Answer: B

333) $ar - as + at$

A) $ar(1 - s + t)$

B) $r(a - s + t)$

C) $a(r + s + t)$

D) $a(r - s + t)$

Answer: D

334) $\frac{1}{8}x - \frac{11}{8}y + \frac{7}{8}$

A) $8(x - 11y + 7)$

B) $\frac{1}{8}\left(x - \frac{11}{8}y + \frac{7}{8}\right)$

C) $\frac{1}{8}(x - 11y + 7)$

D) $\frac{1}{8}(x + 11y - 7)$

Answer: C

Collect like terms.

335) $9a - 2a + 7$

A) $14a$

B) $11a + 7$

C) $7a + 7$

D) $-7a + 7$

Answer: C

336) $-2b + 6b$

A) $-8b$

B) $-4b$

C) $4b^2$

D) $4b$

Answer: D

337) $-9z - (-7z)$

A) $-2z^2$

B) $-16z$

C) $2z$

D) $-2z$

Answer: D

338) $-11y - 2x - 9x$

A) $-22xy$

B) $-11y + 7x$

C) $-11y - 7x$

D) $-11y - 11x$

Answer: D

339) $\frac{1}{6}y - y + 3y$

A) $\frac{19}{6}y$

B) $\frac{13}{6}y$

C) $-\frac{13}{6}y$

D) $-\frac{19}{6}y$

Answer: B

340) $2q - 2 - 5p + 6q - 7p$

A) $8q - 12p - 2$

B) $2q - 12p - 8$

C) $8q + 12p + 2$

D) $8q - 5p - 2$

Answer: A

341) $-9 + 6m - 12n + 6m + 7n + 2$

A) $-3m - 6n + 9$

B) $12m - 5n - 7$

C) $-6m + 13n - 7$

D) $-5m + 12n + 7$

Answer: B

342) $\frac{7}{3}x + \frac{5}{6}y - \frac{1}{3}x - \frac{1}{3}y + 19$

A) $\frac{7}{9}x + \frac{5}{18}y + 19$

B) $2x + \frac{2}{3}y + 19$

C) $2x + \frac{7}{6}y + 19$

D) $2x + \frac{1}{2}y + 19$

Answer: D

343) $8.4a + 9.9b - 5.7a - 7.3b$

A) $2.7a + 2.6b$

B) $14.1a + 17.2b$

C) $2.7a + 17.2b$

D) $-2.7a + 2.6b$

Answer: A

344) $6x + 0.9y - 2.4x + 7y$

A) $6x - 2.4x + 0.9y + 7y$

C) $7.9x + 3.6y$

B) $3.6x + 0.9y + 7$

D) $3.6x + 7.9y$

Answer: D

Find an equivalent expression without parentheses.

345) $-(3x - 5)$

A) $-3x + 5$

B) $-3x - 5$

C) $15x$

D) $3x - 5$

Answer: A

346) $-(-3 + 8y)$

A) $3 - 8y$

B) $24y$

C) $-3 + 8y$

D) $3 + 8y$

Answer: A

347) $-(-9x + 10y - 13z)$

A) $9x + 10y - 13z$

B) $-9x + 10y - 13z$

C) $9x - 10y + 13z$

D) $9x - 10y - 13z$

Answer: C

Remove parentheses and simplify.

348) $6x - (7 - 2x)$

A) $6x - 9$

B) $8x - 7$

C) $4x - 7$

D) $8x + 7$

Answer: B

349) $-10(3r + 4) + 2(10r + 8)$

A) $-70r$

B) $-10r - 24$

C) $-7r - 6$

D) $-10r + 4$

Answer: B

350) $-7.6(3r + 9) + 8.5(4r + 6)$

A) $-4.6r + 1.4$

B) $11.2r + 9$

C) $11.2r - 17.4$

D) $-91.2r$

Answer: C

351) $70r + 42 - 9(6r + 8)$

A) $-126r$

B) $16r - 1$

C) $70r + 8$

D) $16r + -30$

Answer: D

352) $(9x - 6y + 3) - 2(-9x + 6y - 3)$

A) $-27x + 18y - 9$

B) $-18x + 12y - 6$

C) $18x - 12y + 6$

D) $27x - 18y + 9$

Answer: D

Simplify.

353) $(7 + 2)[6 + (2 + 4)]$

A) 196

B) 168

C) 108

D) 45

Answer: C

354) $3[36 + 4(8 + 6)]$

A) 1680

B) 222

C) 276

D) 74

Answer: C

355) $[3(x - 4) - 3] + [9(x - 1) + 9]$

A) $12x - 15$

B) $12x - 3$

C) $12x - 7$

D) $3x - 24$

Answer: A

356) $3\{[6(x - 1) + 3] - [2(3x - 1) + 3]\}$

A) $36x - 12$

B) -12

C) $12x - 4$

D) 0

Answer: B

357) $2 + 19 \cdot 11 - (-26)$

A) 58

B) 237

C) 205

D) 257

Answer: B

358) $21 + (-9)(-27) - 4$

A) 260

B) 806

C) 53

D) 690

Answer: A

359) $2(-13) + 4(-3)$

A) -38

B) 22

C) 102

D) 38

Answer: A

360) $(-24 - 9)(-18 - 5)$

A) 759

B) -195

C) 195

D) -759

Answer: A

361) $24 + 3^2(27) - (-29)$

A) 83

B) 920

C) 296

D) 700

Answer: C

362) $(-5 - 2)[3 + (8 + 2)]$

A) -91

B) 16

C) 20

D) -31

Answer: A

$$363) \frac{7 \cdot (6 + 8) + 7 \cdot 2}{7 \cdot (6 - 1)}$$

A) $3\frac{1}{5}$

B) $2\frac{30}{41}$

C) $2\frac{32}{41}$

D) 2

Answer: A

$$364) -|-9| - |-16 - 4|$$

A) 11

B) -11

C) 29

D) -29

Answer: D

$$365) \frac{11 - 3^2}{6^2 + 5^2}$$

A) $\frac{2}{61}$

B) $\frac{2}{11}$

C) $\frac{8}{11}$

D) $\frac{64}{61}$

Answer: A

$$366) \frac{64 - 4 \cdot 4}{2^3 \div 2^2 - (-2)^2}$$

A) 8

B) $\frac{5}{2}$

C) $-\frac{3}{4}$

D) -24

Answer: D

Provide an appropriate response.

367) There is a distributive property for multiplication with respect to addition: $a(b + c) = ab + ac$. Is there a distributive property for division with respect to subtraction? If so, state the property.

A) No.

B) Yes. $a/(b - c) = a/b - a/c$

Answer: A

368) Choose the expression that is equivalent to the following: $0 + 5b$

A) $5b$

B) 0

C) $-5b$

D) $5 + b$

Answer: A

369) Choose the expression that is equivalent to the following: $5(7a) + 5(3b)$

A) $10(10ab)$

B) $10(7a + 3b)$

C) $5(7a + 3b)$

D) $5(10ab)$

Answer: C

370) Choose the expression that is equivalent to the following: $18x + 3y$

A) $3(6x + 3y)$

B) $3(15x + y)$

C) $3(6x + y)$

D) $21xy$

Answer: C

371) Choose the expression that is equivalent to the following: $(7x + 5y)(7y + 2x)$

A) $(7x + 5y)(2x + 7y)$

B) $(7x + 2x)(5y + 7y)$

C) $9x + 12y$

D) $(7x + 5y)(2y + 7x)$

Answer: A

372) Choose the expression that is equivalent to the following: $(7x + 4y)(9y^3)$

A) $7x + (4y + 9y^3)$

B) $(9y^3)(7x + 4y)$

C) $(7x + 9y^3)(4y)$

D) $(7x) + (4y)(9y^3)$

Answer: B

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

373) Is the integer 0 positive or negative? Explain.

Answer: The integer is neither. It is not a signed integer. It is the starting point on a number line.

374) Is this statement true or false? Why?

$$(2 - 2) - 2 = 2 - (2 - 2)$$

Answer: False. Answers will vary.

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

375) According to the rules for the order of operations, what should be the first step when simplifying the expression

$$[-5 + (-9 + 3)] + (-4 + 9)?$$

A) find the sum of 3 and -4

B) find the sum of -5 and -4

C) find the sum of -9 and 3

D) find the sum of -5 and -9

Answer: C

376) Choose the expression that is equivalent to the following: $1(6x^3)$

A) $6x^3$

B) $7x^3$

C) 1

D) $6x^4$

Answer: A