Test Bank for Algebra for College Students 9th Lial

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

Write the fraction in lowest terms.

1) $\frac{2}{4}$

A) 3 B) 2 C) $\frac{2}{4}$ D) $\frac{1}{2}$

Answer: D

2) $\frac{2}{6}$

A) $\frac{1}{3}$ B) 3 C) $\frac{3}{7}$ D) 5

Answer: A

3) $\frac{15}{27}$

A) $\frac{13}{7}$ B) $\frac{15}{27}$ C) $\frac{9}{5}$ D) $\frac{5}{9}$

Answer: D

4) $\frac{45}{153}$

A) $\frac{5}{17}$ B) $\frac{23}{77}$ C) $\frac{17}{5}$ D) $\frac{38}{11}$

Answer: A

5) $\frac{244}{286}$

A) $\frac{35}{41}$ B) $\frac{95}{81}$ C) $\frac{143}{122}$ D) $\frac{122}{143}$

Answer: D

6) $\frac{66}{820}$

A) $\frac{67}{821}$ B) $\frac{33}{410}$ C) $\frac{410}{33}$ D) $\frac{63}{5}$

Answer: B

7) $\frac{100}{160}$

A) $\frac{101}{161}$ B) $\frac{8}{5}$ C) $\frac{53}{33}$ D) $\frac{5}{8}$

Answer: D

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8) $\frac{28}{26}$

A) $\frac{28}{26}$ B) $\frac{2}{13}$ C) $\frac{14}{13}$ D) $\frac{13}{14}$

Answer: C

Write the improper fraction as a mixed number.

9) $\frac{25}{3}$

A) $\frac{1}{3}$ B) $9\frac{1}{3}$ C) $7\frac{1}{7}$ D) $8\frac{1}{3}$

Answer: D

10) $\frac{19}{5}$

A) $2\frac{4}{5}$ B) $4\frac{4}{5}$ C) $3\frac{4}{5}$ D) $3\frac{4}{7}$

Answer: C

11) $\frac{16}{3}$

A) $5\frac{1}{7}$ B) $5\frac{1}{3}$ C) $6\frac{1}{3}$ D) $4\frac{1}{3}$

Answer: B

12) $\frac{64}{7}$

A) $\frac{7}{64}$ B) $64\frac{64}{7}$ C) $64\frac{7}{64}$ D) $9\frac{1}{7}$

Answer: D

13) $\frac{257}{4}$

A) $257\frac{257}{4}$ B) $257\frac{4}{257}$ C) $64\frac{1}{4}$ D) $\frac{4}{257}$

Answer: C

14) $\frac{46}{13}$

A) $7\frac{2}{13}$ B) $3\frac{6}{13}$ C) $3\frac{7}{13}$ D) $7\frac{3}{13}$

Answer: C

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15) $\frac{53}{16}$

A) $3\frac{5}{16}$ B) $16\frac{1}{16}$ C) $5\frac{5}{16}$ D) $5\frac{1}{16}$

Answer: A

Write the mixed number as an improper fraction.

16) $5\frac{4}{9}$

A) $\frac{49}{4}$ B) $\frac{45}{4}$ C) $\frac{49}{9}$ D) $\frac{45}{9}$

Answer: C

17) $5\frac{3}{5}$

A) $\frac{25}{3}$ B) $\frac{25}{5}$ C) $\frac{28}{5}$ D) $\frac{28}{3}$

Answer: C

18) $7\frac{3}{4}$

A) $\frac{28}{3}$ B) $\frac{31}{3}$ C) $\frac{28}{4}$ D) $\frac{31}{4}$

Answer: D

19) $5\frac{4}{7}$

A) $\frac{39}{4}$ B) $\frac{35}{7}$ C) $\frac{35}{4}$ D) $\frac{39}{7}$

Answer: D

20) $11\frac{7}{10}$

A) $\frac{127}{10}$ B) $\frac{117}{10}$ C) $\frac{18}{10}$ D) $\frac{77}{10}$

Answer: B

Multiply as indicated. Write the answer as a fraction in lowest terms.

21) $\frac{8}{9} \cdot \frac{1}{7}$

A) $\frac{9}{16}$ B) $\frac{8}{63}$ C) $\frac{9}{56}$ D) $\frac{1}{7}$

Answer: B

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22) $\frac{1}{2} \cdot \frac{3}{5}$

A) $\frac{3}{10}$ B) $\frac{6}{5}$ C) $\frac{1}{10}$ D) $\frac{7}{13}$

Answer: A

23) $\frac{7}{8} \cdot \frac{25}{29}$

A) $\frac{200}{203}$ B) $\frac{175}{232}$ C) $\frac{32}{37}$ D) $\frac{7}{232}$

Answer: B

24) $\frac{7}{15} \cdot \frac{19}{22}$

A) $\frac{285}{154}$ B) $\frac{7}{330}$ C) $\frac{133}{330}$ D) $\frac{33}{52}$

Answer: C

25) $\frac{23}{27} \cdot \frac{23}{27}$

A) $\frac{23}{729}$ B) $\frac{529}{729}$ C) $\frac{23}{27}$ D) 1

Answer: B

26) $1\frac{4}{5} \cdot \frac{1}{2}$

A) $\frac{24}{35}$ B) $\frac{5}{18}$ C) $\frac{3}{50}$ D) $\frac{9}{10}$

Answer: D

27) $1\frac{2}{5} \cdot 1\frac{8}{19}$

A) $\frac{189}{95}$ B) $\frac{7}{95}$ C) $\frac{17}{12}$ D) $\frac{135}{133}$

Answer: A

28) $4 \cdot 1\frac{2}{5}$

A) $\frac{25}{16}$ B) $\frac{4}{15}$ C) $\frac{28}{5}$ D) $\frac{27}{5}$

Answer: C

29) $3\frac{2}{9} \cdot 2\frac{12}{25}$

A) $\frac{149}{52}$ B) $\frac{558}{725}$ C) $\frac{1798}{225}$ D) $\frac{29}{225}$

Answer: C

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Divide as indicated. Write the answer as a fraction in lowest terms.

30) $\frac{4}{9} \div \frac{1}{2}$

A) $\frac{4}{9}$ B) $\frac{2}{9}$ C) $\frac{5}{11}$ D) $\frac{8}{9}$

Answer: D

31) $\frac{2}{7} \div \frac{3}{5}$

A) $\frac{1}{42}$ B) $\frac{6}{35}$ C) $\frac{10}{21}$ D) $\frac{8}{17}$

Answer: C

32) $\frac{4}{7} \div 1\frac{3}{11}$

A) $\frac{2}{49}$ B) $\frac{22}{49}$ C) $\frac{8}{11}$ D) $\frac{22}{25}$

Answer: B

33) $2\frac{1}{8} \div 1\frac{1}{13}$

A) $\frac{119}{52}$ B) $\frac{31}{21}$ C) $\frac{17}{112}$ D) $\frac{221}{112}$

Answer: D

34) $2\frac{1}{2} \div 2\frac{2}{3}$

A) $\frac{18}{7}$ B) $\frac{15}{16}$ C) $\frac{20}{3}$ D) $\frac{5}{16}$

Answer: B

35) $15\frac{2}{5} \div 12\frac{2}{7}$

A) $\frac{946}{5}$ B) $\frac{77}{430}$ C) $\frac{539}{430}$ D) $\frac{163}{12}$

Answer: C

Add as indicated. Write the answer as a fraction in lowest terms.

36) $\frac{1}{9} + \frac{2}{9}$

A) $\frac{2}{9}$ B) $\frac{1}{9}$ C) $\frac{1}{6}$ D) $\frac{1}{3}$

Answer: D

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37) $\frac{5}{26} + \frac{7}{26}$

A) $\frac{1}{13}$ B) $\frac{35}{26}$ C) $\frac{6}{13}$ D) $\frac{3}{13}$

Answer: C

38) $\frac{1}{3} + \frac{3}{5}$

A) $\frac{4}{15}$ B) $\frac{1}{2}$ C) $\frac{7}{4}$ D) $\frac{14}{15}$

Answer: D

39) $\frac{9}{11} + \frac{6}{7}$

A) $\frac{43}{6}$ B) $\frac{15}{77}$ C) $\frac{5}{6}$ D) $\frac{129}{77}$

Answer: D

40) $\frac{7}{24} + \frac{1}{27}$

A) $\frac{13}{186}$ B) $\frac{13}{3888}$ C) $\frac{213}{31}$ D) $\frac{71}{216}$

Answer: D

41) $1\frac{2}{3} + 1\frac{2}{7}$

A) $\frac{2}{3}$ B) $\frac{7}{5}$ C) $\frac{31}{5}$ D) $\frac{62}{21}$

Answer: D

42) $6\frac{1}{5} + 8\frac{3}{8}$

A) $\frac{583}{40}$ B) $\frac{49}{20}$ C) $\frac{583}{13}$ D) $\frac{98}{13}$

Answer: A

43) $7\frac{5}{11} + 6\frac{8}{15}$

A) $\frac{2308}{165}$ B) $\frac{90}{13}$ C) $\frac{12}{11}$ D) $\frac{1154}{13}$

Answer: A

44) $\frac{1}{28} + \frac{1}{7}$

A) $\frac{5}{56}$ B) $\frac{2}{35}$ C) $\frac{5}{28}$ D) $\frac{1}{35}$

Answer: C

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Subtract as indicated. Write the answer as a fraction in lowest terms.

45) $\frac{4}{8} - \frac{2}{8}$

A) 1 B) $\frac{1}{4}$ C) $\frac{3}{4}$ D) $\frac{1}{8}$

Answer: B

46) $\frac{6}{26} - \frac{5}{26}$

A) $\frac{1}{26}$ B) $\frac{1}{52}$ C) $\frac{15}{13}$ D) $\frac{11}{26}$

Answer: A

47) $\frac{2}{3} - \frac{3}{8}$

A) $\frac{24}{7}$ B) $\frac{7}{3}$ C) $\frac{1}{24}$ D) $\frac{7}{24}$

Answer: D

48) $\frac{8}{9} - \frac{4}{15}$

A) $\frac{28}{3}$ B) $\frac{28}{45}$ C) $\frac{4}{135}$ D) $\frac{45}{28}$

Answer: B

49) $\frac{22}{25} - \frac{5}{8}$

A) $\frac{51}{200}$ B) $\frac{7}{600}$ C) $\frac{200}{51}$ D) $\frac{153}{25}$

Answer: A

50) $5\frac{1}{3} - 1\frac{3}{8}$

A) $\frac{95}{3}$ B) $\frac{95}{24}$ C) $\frac{5}{24}$ D) $\frac{24}{95}$

Answer: B

51) $21\frac{2}{5} - 13\frac{1}{6}$

A) $\frac{247}{5}$ B) $\frac{247}{30}$ C) $\frac{14}{15}$ D) $\frac{30}{247}$

Answer: B

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52) $\frac{7}{9} - \frac{1}{12}$

A) $\frac{25}{36}$ B) $\frac{31}{36}$ C) 0 D) 2

Answer: A

Solve the problem.

53) Ellen is knitting a scarf with one $2\frac{1}{2}$ –inch blue stripe, one $2\frac{4}{7}$ –inch green stripe, and one $1\frac{2}{3}$ –inch white stripe. How wide is the scarf?

A) $\frac{42}{283}$ in. B) $6\frac{31}{42}$ in. C) $\frac{17}{38}$ in. D) $2\frac{4}{17}$ in.

Answer: B

54) While shopping for a party, June bought $1\frac{2}{3}$ pounds of hamburger, $4\frac{1}{3}$ pounds of chicken, and $4\frac{3}{4}$ pounds of ham. How much meat did she buy?

A) $10\frac{3}{4}$ lb B) $3\frac{3}{13}$ lb C) $\frac{4}{43}$ lb D) $\frac{13}{42}$ lb

Answer: A

55) To obtain a certain shade of paint, Peter mixed $2\frac{2}{9}$ gallons of white paint with 7 gallons of brown and $9\frac{1}{2}$ gallons of blue paint. How much paint did he have?

A) $\frac{13}{53}$ gal B) $4\frac{1}{13}$ gal C) $18\frac{13}{18}$ gal D) $\frac{18}{337}$ gal

Answer: C

56) If John puts $\frac{3}{4}$ lb of roast beef on each sandwich, how many sandwiches can he make from $3\frac{3}{4}$ lb of roast beef?

A) 3 sandwiches B) 5 sandwiches C) 4 sandwiches D) 15 sandwiches

Answer: B

57) Anne writes one page in $\frac{2}{3}$ of an hour. How many pages can she write in $3\frac{1}{3}$ hours?

A) 7 page(s) B) 1 page(s) C) 5 page(s) D) 3 page(s)

Answer: C

58) A sawmill trims rough cut boards to look smooth. When a board is rough cut, it is 8 inches wide. When it is trimmed, it is $7\frac{7}{16}$ inches wide. How much width was trimmed off?

A) $\frac{9}{16}$ inch B) $\frac{119}{16}$ inches C) $8\frac{9}{16}$ inches D) $\frac{7}{16}$ inch

Answer: A

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59)

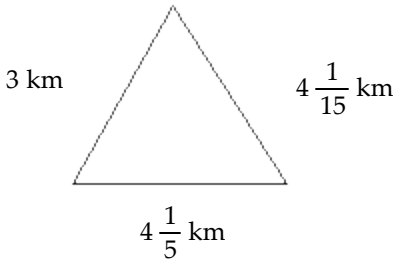
	MICROWAVE	STOVE TOP		
Servings	3	3	4	6
Milk	$3\frac{3}{4}$ cup	3 cups	5 cups	6 cups
Oatmeal	6 Tbsp	5 Tbsp	1 cup	3 cups
Butter	1 pat	1 pat	$\frac{1}{4}$ Tbsp	$\frac{1}{2}$ Tbsp

Using the chart above, (I) how many cups of milk would be needed for 8 microwave servings? (II) How many tablespoons of butter would be needed for 5 stove top servings?

A) 10 cups; $\frac{3}{8}$ Tbsp B) $1\frac{11}{12}$ cups; $\frac{3}{4}$ Tbsp C) $9\frac{1}{3}$ cups; $\frac{5}{8}$ Tbsp D) 4 cups; $\frac{1}{8}$ Tbsp

Answer: A

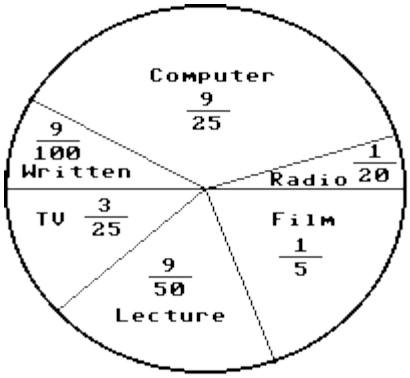
60) Find the perimeter of the triangle in the figure.



A) $7\frac{4}{15}$ ft B) $11\frac{4}{15}$ ft C) $11\frac{1}{5}$ ft D) $11\frac{2}{15}$ ft

Answer: B

61)



In a school survey, students showed these preferences for instructional materials.
About how many students would you expect to prefer computers in a school of 600 students?

A) About 108 students B) About 120 students C) About 36 students D) About 216 students

Answer: D

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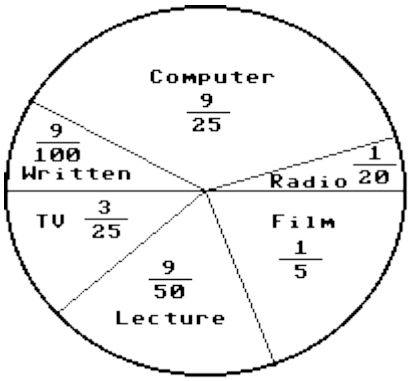
62)



In a school survey, students showed these preferences for instructional materials.
About how many students would you expect to prefer lectures in a school of 250 students?

A) About 90 students B) About 18 students C) About 50 students D) About 45 students

Answer: D

Write the decimal as a fraction. Do not write in lowest terms.

63) 0.688

A) $\frac{688}{1000}$ B) $\frac{344}{1000}$ C) $\frac{1}{688}$ D) $\frac{1376}{1000}$

Answer: A

64) 6.5

A) $\frac{1}{65}$ B) $\frac{65}{10}$ C) $\frac{130}{100}$ D) $\frac{130}{10}$

Answer: B

65) 9.83

A) $\frac{491.5}{100}$ B) $\frac{1}{983}$ C) $\frac{1966}{100}$ D) $\frac{983}{100}$

Answer: D

66) 9.16

A) $\frac{1832}{100}$ B) $\frac{916}{100}$ C) $\frac{458}{100}$ D) $\frac{1}{916}$

Answer: B

67) 0.6

A) $\frac{6}{100}$ B) $\frac{1}{60}$ C) $\frac{1}{6}$ D) $\frac{6}{10}$

Answer: D

68) 3.982

A) $\frac{3982}{10,000}$ B) $\frac{3982}{100}$ C) $\frac{3982}{10}$ D) $\frac{3982}{1000}$

Answer: D

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Add or subtract as indicated. Make sure that your answer is reasonable by estimating first.

69) 2.645 + 8.686
A) 12.331 B) −6.041 C) 6.041 D) 11.331
Answer: D

70) 7.07 + 8.013
A) 0.943 B) 15.183 C) 15.083 D) −0.943
Answer: C

71) 10.6 + 17.997
A) 28.697 B) −7.397 C) 7.397 D) 28.597
Answer: D

72) 9 + 7.96 + 0.807
A) 0.233 B) 16.153 C) 1.847 D) 17.767
Answer: D

73) 8.8 − 8.08
A) −0.72 B) 16.88 C) 0.72 D) 0.82
Answer: C

74) 77 − 0.0881
A) 77.0881 B) −76.9119 C) 77.0119 D) 76.9119
Answer: D

75) 18.995 − 8.591
A) −10.404 B) 27.586 C) 10.504 D) 10.404
Answer: D

76) 80.804 + 34.99 + 586.764 + 405.242
A) 743.0822 B) 1422.71 C) 1107.8 D) 579.7124
Answer: C

77) 89.579 + 186.661 + 8.561
A) 284.801 B) 204.1799 C) 116.8061 D) 361.85
Answer: A

Multiply or divide as indicated. Make sure that your answer is reasonable by estimating first.

78) 1.17 × 2
A) 2.34 B) 3.17 C) 3 D) 2
Answer: A

79) 5.0 × 1.5
A) 7.6 B) 7.50 C) 7.61 D) 7.611
Answer: B

80) 102.4 × 0.10
A) 10.35 B) 10.351 C) 10.34 D) 10.240
Answer: D

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81) 18.09×0.008

A) 0.24472 B) 0.14472 C) 1.24472 D) 0.25472

Answer: B

82) $48.2 \div 5$

A) 96.4 B) 9.64 C) 0.104 D) 0.964

Answer: B

83) $53.9 \div 9.65$

A) 0.179 B) 5.585 C) 0.559 D) 55.855

Answer: B

Change the fraction to a decimal. Round as indicated.

84) $\frac{6}{7}$ hundredths

A) 0.43 B) 4.30 C) 0.86 D) 0.17

Answer: C

85) $\frac{7}{11}$ ten thousandths

A) 0.3182 B) 0.6364 C) 0.1273 D) 3.1820

Answer: B

86) $\frac{36}{37}$ thousandths

A) 0.487 B) 4.865 C) 0.973 D) 0.195

Answer: C

87) $\frac{5}{3}$ tenths

A) 1.7 B) 0.3 C) 8.5 D) 0.9

Answer: A

88) $1\frac{11}{37}$ tenths

A) 0.7 B) 1.3 C) 6.5 D) 0.3

Answer: B

89) $\frac{5}{7}$ three decimal places

A) 0.143 B) 0.714 C) 0.357 D) 3.570

Answer: B

90) $1\frac{13}{35}$ three decimal places

A) 0.686 B) 1.371 C) 6.855 D) 0.274

Answer: B

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Write as a decimal.

91) 79%

A) 0.079 B) 7.9 C) 0.68 D) 0.79

Answer: D

92) 60.5%

A) 0.0605 B) 0.495 C) 0.605 D) 6.05

Answer: C

93) 200%

A) 20 B) 0.2 C) 2 D) 2.01

Answer: C

94) 790%

A) 7.91 B) 0.79 C) 79 D) 7.9

Answer: D

95) 138%

A) 1.39 B) 1.38 C) 0.138 D) 13.8

Answer: B

96) 28.75%

A) 0.2875 B) 0.02875 C) 0.2775 D) 2.875

Answer: A

97) 0.96%

A) 0.096 B) 0.96 C) 0.0096 D) 0.0106

Answer: C

98) 93.5%

A) 0.00935 B) 0.0935 C) 9.35 D) 0.935

Answer: D

99) $5\frac{1}{8}\%$

A) 0.5125 B) 5.0013 C) 0.0513 D) 5.125

Answer: C

100) $7\frac{2}{7}\%$

A) 7.2857 B) 0.7286 C) 7.0029 D) 0.0729

Answer: D

Write as a percent.

101) 0.17

A) 1.7% B) 170% C) 0.017% D) 17%

Answer: D

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102) 0.6

A) 60% B) 0.6% C) 600% D) 0.06%

Answer: A

103) 0.357

A) 0.357% B) 35.7% C) 357% D) 0.0357%

Answer: B

104) 0.616

A) 61.6% B) 616% C) 0.616% D) 0.0616%

Answer: A

105) 9.8

A) 0.0098% B) 0.98% C) 980% D) 98%

Answer: C

106) 0.00551

A) 0.551% B) 0.000551% C) 0.0551% D) 0.2755%

Answer: A

107) 7

A) 350% B) 700% C) 0.7% D) 0.07%

Answer: B

Write the percent as a fraction in lowest terms.

108) 88%

A) $\frac{22}{25}$ B) $\frac{11}{25}$ C) $\frac{44}{5}$ D) $\frac{44}{25}$

Answer: A

109) $\frac{7}{12}$%

A) $\frac{7}{600}$ B) $\frac{7}{2400}$ C) $\frac{7}{1200}$ D) $\frac{7}{120}$

Answer: C

110) 0.5%

A) $\frac{1}{20}$ B) $\frac{1}{200}$ C) $\frac{1}{100}$ D) $\frac{1}{400}$

Answer: B

111) 400%

A) 400 B) 40 C) 4000 D) 4

Answer: D

112) 1.75%

A) $\frac{35}{2}$ B) $\frac{7}{400}$ C) $\frac{7}{4}$ D) $\frac{7}{40}$

Answer: B

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Write the fraction as a percent. Round to the nearest tenth of a percent if necessary.

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

A) 20% B) 5% C) 50% D) 250%

Answer: C

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

A) 1% B) 100% C) 10% D) 0.1%

Answer: C

115) $\frac{39}{100}$

A) 0.39% B) 39% C) 390% D) 3.9%

Answer: B

116) $\frac{37}{100}$

A) 3.7% B) 18.5% C) 1000% D) 37%

Answer: D

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

A) 75% B) 7.5% C) 40% D) 187.5%

Answer: A

118) $\frac{10}{17}$

A) 34.6% B) 170% C) 5.9% D) 58.8%

Answer: D

119) $\frac{17}{4}$

A) 1062.5% B) 40% C) 425% D) 42.5%

Answer: C

Write the set by listing its elements.

120) {x | x is a natural number less than 11}

A) {1, ..., 8, 9, 10} B) {1, ..., 6, 8, 10} C) {0, 1, ..., 8, 9, 10} D) {1, ..., 8, 9, 10, 11}

Answer: A

121) {a | a is an integer greater than 1}

A) {–5, –3, –1, 1, ...} B) {1, 2, 3, 4, ...} C) {3, 5, 7, ...} D) {2, 3, 4, ...}

Answer: D

122) {a | a is an even integer greater than 4}

A) {4, 6, 8, 10, ...} B) {5, 6, 7, ...} C) {–2, 0, 2, ...} D) {6, 8, 10, ...}

Answer: D

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123) {z | z is a number whose absolute value is 4}
A) {–4} B) {4} C) {–4, ..., 4} D) {–4, 4}
Answer: D

124) {p | p is an irrational number that is also rational}
A) {1} B) {0} C) {–1} D) ∅
Answer: D

125) {a | a is a whole number multiple of 10}
A) {0, 10, 20, 30, 40, ...} B) {10, 20, 30, 40, ...}
C) {0, 10, 20, 30, 40} D) {..., –20, –10, 0, 10, 20, ...}
Answer: A

126) {a | a is a counting number multiple of 5}
A) {5, 10, 15, 20} B) {0, 5, 10, 15, 20, ...}
C) {..., –10, –5, 0, 5, 10, ...} D) {5, 10, 15, 20, ...}
Answer: D

127) {a | a is a natural number greater than 8}
A) {9, 11, 13, ...} B) {8, 16, 24, ...} C) {9, 10, 11, ...} D) {8, 9, 10, ...}
Answer: C

Write the set using set–builder notation.

128) {2, 4, 6, 8, 10}
A) {x|x is an even natural number less than or equal to 10}
B) {x|x is any even natural number}
C) {2, 4, 6, 8}
D) {x|x is any integer}
Answer: A

129) {16, 17, 18, 19}
A) {x|x is an integer less than 20} B) {x|x is a natural number between 15 and 20}
C) {16, 17, 18, 19} D) {x|x is a natural number between 16 and 19}
Answer: B

130) {–3, –2, –1, 0, . . .}
A) {x|x is an integer greater than –4} B) {–3, –2, –1, 0}
C) {x|x is an integer between –4 and 1} D) {x|x is any integer}
Answer: A

131) {. . ., –3, –2, –1, 0, 1, 2, 3, . . . }
A) {x|x is any integer greater than –3} B) {x|x is a natural number}
C) {x|x is an integer} D) {–3, –2, –1, 0, 1, 2, 3}
Answer: C

132) {–10, –9, –8, –7, –6}
A) {x|x is an integer between –11 and –5} B) {x|x is a natural number between –11 and –5}
C) {x|x is a number between –10 and –6} D) {x|x is an integer between –10 and –6}
Answer: A

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133) {5, 6, 7, 8, 9}

A) {x|x is a number between 5 and 9}

B) {x|x is an integer between 5 and 9}

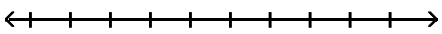
C) {x|x is an integer between 4 and 10}

D) {x|x is an irrational number between 4 and 10}

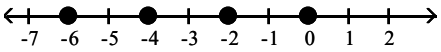
Answer: C

Graph the elements of the set on a number line.

134) {–6, –4, –2, 0}



A)



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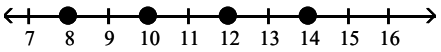

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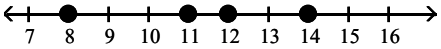

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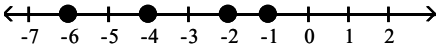
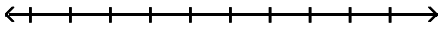
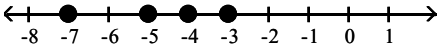


Answer: A

135) {–7, –5, –3, –1}



A)



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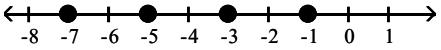

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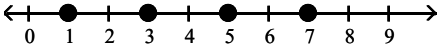

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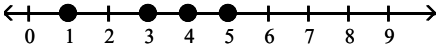
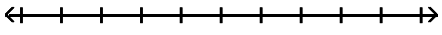
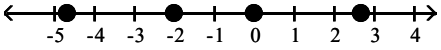


Answer: B

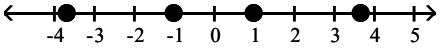
136) $\left\{-\frac{14}{3}, -2, 0, \frac{8}{3}\right\}$



A)



B)



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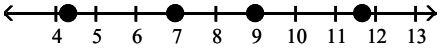

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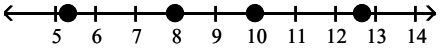

Answer: A

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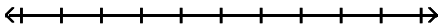
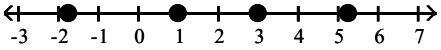
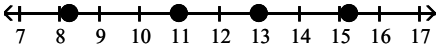
137) $\left\{-\frac{7}{4}, 1, 3, \frac{21}{4}\right\}$



A)



B)



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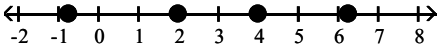
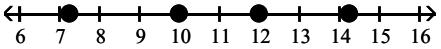


D)



Answer: A

List all the elements of set B that are of the indicated type.

138) $B = \{4, \sqrt{6}, -14, 0, \frac{0}{2}, \sqrt{4}\}$

Integers

A) 4, 0 B) 4, 0, $\sqrt{4}$ C) 4, –14, 0 D) 4, –14, 0, $\frac{0}{2}$, $\sqrt{4}$

Answer: D

139) $B = \{15, \sqrt{8}, -4, 0, \frac{0}{8}, \sqrt{25}\}$

Whole numbers

A) 15, –4, 0 B) 15, 0 C) 15, –4, 0, $\sqrt{25}$ D) 15, 0, $\frac{0}{8}$, $\sqrt{25}$

Answer: D

140) $B = \{1, \sqrt{6}, -11, 0, \frac{0}{4}, \sqrt{4}\}$

Natural numbers

A) 1, 0, $\sqrt{4}$ B) 1, 0, $\frac{0}{3}$ C) 1, 0 D) 1, $\sqrt{4}$

Answer: D

141) $B = \{15, \sqrt{7}, -20, 0, \frac{0}{5}, \sqrt{9}, \frac{-4}{0}\}$

Real numbers

A) 15, –20, 0, $\sqrt{9}$ B) 15, $\sqrt{7}$, –20, 0, $\frac{0}{5}$, $\sqrt{9}$

C) 15, –20, 0, $\frac{0}{5}$, $\sqrt{9}$ D) 15, –20, 0, $\frac{0}{5}$, $\frac{-4}{0}$

Answer: B

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142) B = $\{5, \sqrt{7}, -17, 0, \frac{0}{5}, \sqrt{25}, \pi, \frac{-8}{0}, 0.07\}$

Rational numbers

A) $5, -17, 0, \frac{0}{5}, \sqrt{25}, 0.07$

B) $\sqrt{7}, \frac{0}{5}, 0.07$

C) $\sqrt{7}, \sqrt{25}$

D) $5, 0, \sqrt{25}, \pi$

Answer: A

143) B = $\{-\sqrt{4}, 10, \sqrt{5}, -19, 0, \frac{0}{3}, \pi, \frac{-6}{0}, 0.02\}$

Irrational numbers

A) $-\sqrt{4}, \sqrt{5}, \pi$

B) $\sqrt{5}, \frac{-6}{0}, \pi$

C) $-\sqrt{4}, \sqrt{5}, 0.02$

D) $\sqrt{5}, \pi$

Answer: D

Mark the statement as true or false.

144) Every whole number is a real number.

A) True

B) False

Answer: A

145) Some rational numbers are irrational.

A) True

B) False

Answer: B

146) Some rational numbers are integers.

A) True

B) False

Answer: A

147) Every integer is an irrational number.

A) True

B) False

Answer: B

148) The absolute value of any number is positive.

A) True

B) False

Answer: B

149) Some real numbers are integers.

A) True

B) False

Answer: A

150) The absolute value of any nonzero number is positive.

A) True

B) False

Answer: A

151) The absolute value of any nonzero number is an irrational number.

A) True

B) False

Answer: B

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152) The number zero has no additive inverse.

A) True B) False

Answer: B

153) Division of zero by a nonzero number is undefined.

A) True B) False

Answer: B

Give the additive inverse of the number.

154) 16

A) 0 B) $\frac{1}{16}$ C) –16 D) 16

Answer: C

155) –21

A) 21 B) 0 C) –21 D) $-\frac{1}{21}$

Answer: A

156) –(–30)

A) 0 B) –30 C) $-\frac{1}{30}$ D) 30

Answer: B

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

A) $-\frac{6}{7}$ B) $\frac{7}{6}$ C) $\frac{6}{7}$ D) $-\frac{7}{6}$

Answer: A

158) 0

A) $\frac{1}{0}$ B) 0 C) 1 D) Does not exist

Answer: B

159) 0.36

A) 0.36 B) –0.36 C) $\frac{9}{25}$ D) $\frac{1}{36}$

Answer: B

Find the value of the expression.

160) $|-9|$

A) 9 B) 0 C) –9 D) ±9

Answer: A

161) $|-6| - |-9|$

A) –15 B) 15 C) –3 D) 3

Answer: C

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162) $\left|\frac{5}{2}\right|$

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

Answer: A

163) $|-5.2|$

A) 10.4 B) 5.2 C) 0 D) –5.2

Answer: B

164) $-|14|-|-21|$

A) 35 B) 7 C) –35 D) –7

Answer: C

165) $-|4|$

A) 0 B) 2.000 C) –4 D) 4

Answer: C

166) $-|-20|$

A) 20 B) –20 C) 4.472 D) 0

Answer: B

167) $|-8|+|-19|$

A) –11 B) 11 C) –27 D) 27

Answer: D

168) $|-15|-|-17|$

A) –32 B) 32 C) 2 D) –2

Answer: D

169) $|-3|+|-15|-|-5|$

A) –23 B) 23 C) –13 D) 13

Answer: D

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The NSC (Not So Consistent) Corporation has just completed its first year of business. The following chart shows its monthly profit (or loss).

Month	Profit (Loss) in Dollars
January	**–14,526**
February	**1874**
March	**–8977**
April	**–14,107**
May	**14,073**
June	**14,632**
July	**–13,834**
August	**–13,170**
September	**–4860**
October	**6630**
November	**–3338**
December	**–974**

170) The loss was greatest in
A) January B) June C) November D) December
Answer: A

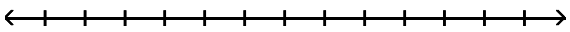
171) The loss with the greatest absolute value occurred in
A) January B) December C) February D) June
Answer: A

172) List the months in which a profit was made in order from least profitable month to most profitable month.
A) September, November, February, December B) February, October, May, June
C) June, May, October, February D) December, February, November, September
Answer: B

173) The absolute value of the profit or loss was greatest in
A) June B) December C) January D) February
Answer: A

174) The absolute value of the profit or loss was smallest in
A) January B) June C) February D) December
Answer: D

Use a number line to answer true or false to the statement.



175) $7 > 18$
A) True B) False
Answer: B

176) $-20 \leq -3$
A) True B) False
Answer: A

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177) $-5 < 0$
A) True B) False
Answer: A

178) $7 < -2$
A) True B) False
Answer: B

179) $23 > -10$
A) True B) False
Answer: A

180) $-2 \leq 12$
A) True B) False
Answer: A

181) $-24 > -13$
A) True B) False
Answer: B

182) $-5 \geq 18$
A) True B) False
Answer: B

Rewrite the statement so the inequality symbol points in the opposite direction.

183) $22 < 44$
A) $22 > 44$ B) $44 > 22$ C) $44 < 22$ D) $44 \geq 22$
Answer: B

184) $40 > 15$
A) $40 < 15$ B) $40 \geq 15$ C) $15 < 40$ D) $15 > 40$
Answer: C

185) $10 \geq 3$
A) $10 > 3$ B) $10 \leq 3$ C) $3 \geq 10$ D) $3 \leq 10$
Answer: D

186) $6 \leq 26$
A) $26 > 6$ B) $6 \geq 26$ C) $26 \leq 6$ D) $26 \geq 6$
Answer: D

187) $-14 < 38$
A) $38 > -14$ B) $38 < -14$ C) $38 > 14$ D) $-38 > 14$
Answer: A

188) $-15 > -26$
A) $-26 > -15$ B) $15 > 26$ C) $26 < 15$ D) $-26 < -15$
Answer: D

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189) $-38 < x$

A) $x > 38$ B) $x < 38$ C) $x > -38$ D) $x < -38$

Answer: C

Use inequality symbols to rewrite the statement.

190) 8 is greater than y.

A) $8 > y$ B) $8 \geq y$ C) $8 < y$ D) $8 \leq y$

Answer: A

191) 1 is less than or equal to y.

A) $1 < y$ B) $1 \leq y$ C) $1 \geq y$ D) $1 > y$

Answer: B

192) 8 is greater than or equal to 8.

A) $8 \geq 8$ B) $8 < 8$ C) $8 > 8$ D) $8 \leq 8$

Answer: A

193) $5x - 6$ is greater than or equal to 9.

A) $5x - 6 \leq 9$ B) $5x - 6 \geq 9$ C) $5x - 6 < 9$ D) $5x - 6 > 9$

Answer: B

194) $-10x + 1$ is not equal to 9.

A) $-10x + 1 = 9$ B) $-10x + 1 \leq 9$ C) $-10x + 1 \neq 9$ D) $-10x + 1 > 9$

Answer: C

195) x is between 2 and 5.

A) $2 < x \leq 5$ B) $2 \leq x < 5$ C) $2 < x < 5$ D) $2 > x > 5$

Answer: C

196) x is between -18 and 10, excluding -18 and including 10.

A) $-18 \leq x \leq 10$ B) $-18 \leq x < 10$ C) $-18 < x < 10$ D) $-18 < x \leq 10$

Answer: D

197) x is between -18 and 12, including -18 and 12.

A) $-18 \leq x < 12$ B) $-18 \leq x \leq 12$ C) $-18 < x < 12$ D) $-18 < x \leq 12$

Answer: B

Determine whether the inequality is true or false.

198) $-10 \leq 17 + 7$

A) True B) False

Answer: A

199) $2 + 2 \leq 4 \cdot 6$

A) True B) False

Answer: A

200) $3 \cdot 10 \leq 18 + 7$

A) True B) False

Answer: B

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201) $|-5| \geq -|5|$

A) True B) False

Answer: A

202) $15 \cdot |-4| < 6 + |20|$

A) True B) False

Answer: B

203) $-32 \geq -|-4|$

A) True B) False

Answer: B

Write the set using interval notation.

204) $\{x \mid x > 4\}$

A) $(4, -\infty)$ B) $(-\infty, 4)$ C) $(\infty, 4)$ D) $(4, \infty)$

Answer: D

205) $\{x \mid x \leq -9\}$

A) $[-9, \infty)$ B) $(\infty, -9]$ C) $[-9, -\infty)$ D) $(-\infty, -9]$

Answer: D

206) $\{x \mid -1 < x < 3\}$

A) $[-1, 3)$ B) $(-1, 3)$ C) $[-1, 3]$ D) $(-1, 3]$

Answer: B

207) $\{x \mid -5 \leq x \leq 1\}$

A) $(-5, 1]$ B) $(-5, 1)$ C) $[-5, 1)$ D) $[-5, 1]$

Answer: D

208) $\{x \mid -8 \leq x < 9\}$

A) $(-8, 9)$ B) $(-8, 9]$ C) $[-8, 9]$ D) $[-8, 9)$

Answer: D

209) $\{x \mid 8 < x \leq 9\}$

A) $(8, 9)$ B) $(8, 9]$ C) $[8, 9]$ D) $[8, 9)$

Answer: B

210) $\{x \mid -6 < x < 4\}$

A) $[-6, 4)$ B) $(-6, 4)$ C) $(-6, 4]$ D) $[-6, 4]$

Answer: B

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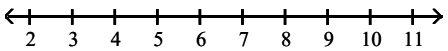
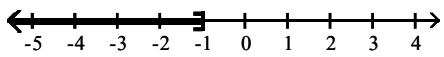
Graph the inequality on a number line.

211) { x | x > –1 }



A)



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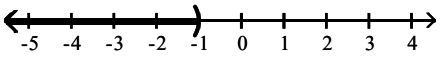

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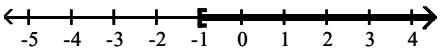
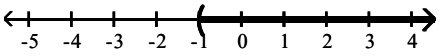
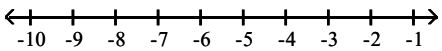


D)

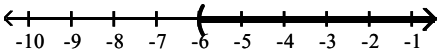


Answer: D

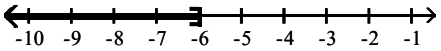
212) { x | x < –6 }



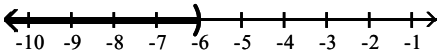
A)



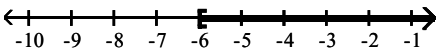
B)



C)

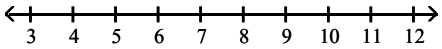


D)

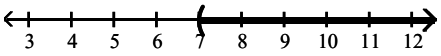


Answer: C

213) {x | x ≥ 7 }



A)



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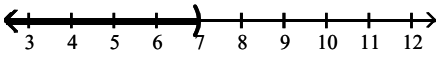
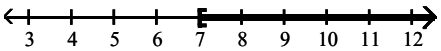
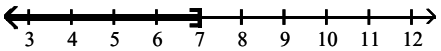


C)

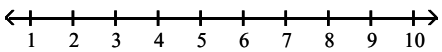


D)

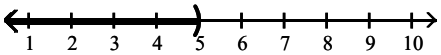


Answer: C

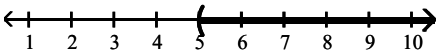
214) { x | x ≤ 5 }



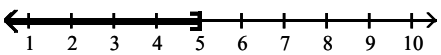
A)



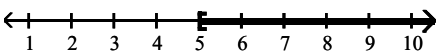
B)



C)



D)



Answer: C

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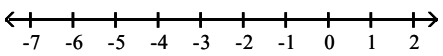
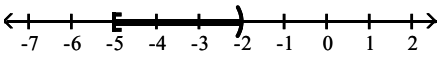
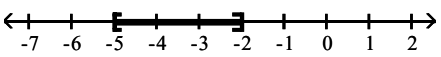
215) { x | –5 ≤ x ≤ –2 }



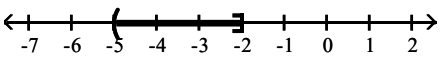
A)



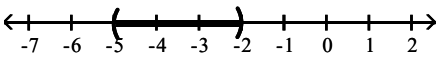
B)



C)

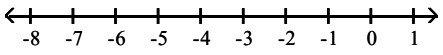


D)

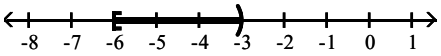


Answer: B

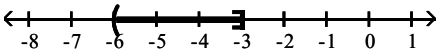
216) { x | –6 < x ≤ –3 }



A)



B)



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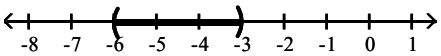

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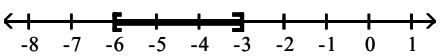
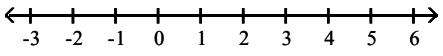
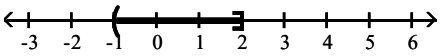


Answer: B

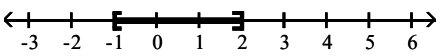
217) { x | –1 ≤ x < 2 }



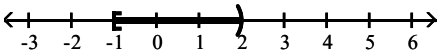
A)



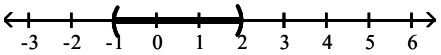
B)



C)

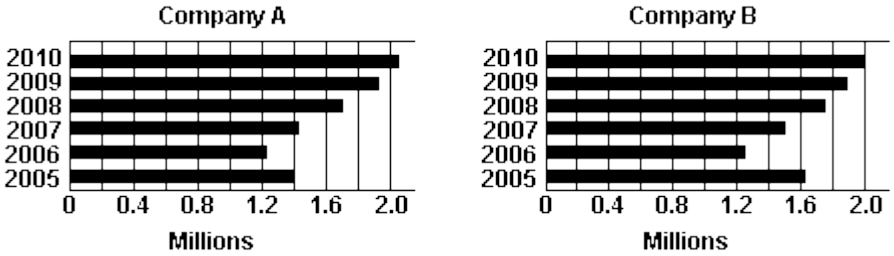


D)



Answer: C

The graphs show the sales of two companies competing for market share.



218) During which years were the sales of Company A greater than or equal to 1.2 million items?

A) 2007, 2008, 2009, 2010

B) 2005, 2006, 2007, 2008, 2009, 2010

C) 2005, 2006

D) 2010

Answer: B

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219) During which years were the sales of Company B less than those of Company A?

A) 2010 B) None

C) 2009, 2010 D) 2005, 2006, 2007, 2008

Answer: C

220) During which years were the sales of Company B greater than or equal to 1.8 million items?

A) 2005, 2006, 2007, 2008 B) 2009, 2010

C) 2005, 2006, 2007 D) 2008, 2009, 2010

Answer: B

221) If x represents Company B's sales in 2005 and y represents Company B's sales in 2008, the relationship between x and y is

A) $x < y$ B) $x = y$ C) $x > y$

Answer: A

222) During which years were the sales of Company B greater than those of Company A?

A) 2005, 2006, 2007, 2008 B) 2005, 2006

C) 2009, 2010 D) None

Answer: A

223) If x represents Company B's sales in 2007 and y represents Company A's sales in the same year, then the relationship between x and y is

A) $x > y$ B) $x = y$ C) $x < y$

Answer: A

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

Answer the question.

224) Explain why the statement $x < 5$ or $x > 8$ cannot be written: $8 < x < 5$.

Answer: "$8 < x < 5$" means "$x < 5$ and $x > 8$"

225) A student claims that {1, 2, 3} and the set {3, 2, 1} are the same set. Explain why the student is correct or why the student is incorrect.

Answer: The student is correct because the sets contain exactly the same elements. The order the elements appear is not important.

226) A student claims that { 0 } is the same set as ∅ because zero means none, hence the number of elements in { 0 } is none. Was the student correct? Explain your answer.

Answer: No, the number zero is an element of the set {0}, hence the set has one element.

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

Add or subtract as indicated.

227) $8 + (-2)$

A) 6 B) −10 C) −6 D) 10

Answer: A

228) $-3 + 16$

A) 13 B) −19 C) 19 D) −13

Answer: A

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229) $-24 + (-11)$

A) 13 B) −13 C) −35 D) 35

Answer: C

230) $-68 + 40$

A) −108 B) 28 C) 108 D) −28

Answer: D

231) $-11 + 21$

A) −32 B) 32 C) −10 D) 10

Answer: D

232) $-11 - 19$

A) −8 B) 8 C) 30 D) −30

Answer: D

233) $61 - (-12)$

A) −73 B) 73 C) 49 D) −49

Answer: B

234) $8 - (-26)$

A) 34 B) −34 C) 18 D) −18

Answer: A

235) $-10 - (-22)$

A) 32 B) 12 C) −12 D) −32

Answer: B

236) $11 - (-5)$

A) 6 B) −16 C) −6 D) 16

Answer: D

Perform the indicated operation.

237) $\left(-\frac{4}{3}\right) + \left(-\frac{1}{9}\right)$

A) $-\frac{13}{9}$ B) $\frac{1}{3}$ C) $\frac{13}{9}$ D) $-\frac{1}{9}$

Answer: A

238) $\left(-\frac{4}{9}\right) + \left(\frac{1}{4}\right)$

A) $\frac{5}{4}$ B) $\frac{7}{36}$ C) $-\frac{5}{36}$ D) $-\frac{7}{36}$

Answer: D

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239) $\left(-\frac{4}{3}\right)-\left(-\frac{5}{12}\right)$

A) $-\frac{11}{12}$ B) $\frac{1}{36}$ C) $-\frac{1}{12}$ D) $\frac{11}{12}$

Answer: A

240) $\left(\frac{7}{9}\right)-\left(\frac{2}{63}\right)$

A) $\frac{47}{63}$ B) $-\frac{5}{63}$ C) $-\frac{5}{567}$ D) $-\frac{47}{63}$

Answer: A

241) (0.73) – (–0.38)

A) –0.2774 B) –0.25 C) 1.11 D) –0.35

Answer: C

242) 0.69 – (–0.48)

A) 0.3312 B) 1.17 C) 0.21 D) 1.27

Answer: B

243) (4.3) + (–1.4)

A) 5.7 B) 2.9 C) –5.7 D) –6.02

Answer: B

244) 0.03 + (–7.265)

A) –7.295 B) 0.218 C) –7.235 D) –7.195

Answer: C

245) 6.184 + (–3.097)

A) –9.181 B) –9.281 C) 19.152 D) 3.087

Answer: D

246) –7.15 + (–3.97)

A) 11.12 B) 3.18 C) 28.386 D) –11.12

Answer: D

247) 2.737 – (–0.36)

A) 3.197 B) 0.985 C) 3.097 D) 2.377

Answer: C

Add or subtract as indicated.

248) |–15 – 16|

A) 1 B) –31 C) 31 D) –1

Answer: C

249) |19 + 14|

A) 33 B) –5 C) 5 D) –33

Answer: A

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250) |16| – |18|
A) 34 B) –2 C) 2 D) –34
Answer: B

251) |11| + |18|
A) 7 B) 29 C) –29 D) –7
Answer: B

252) –|3| + |4|
A) 1 B) –1 C) 7 D) –7
Answer: A

253) |–2 – 3|
A) 5 B) –5 C) –1 D) 1
Answer: A

254) |2 + 7|
A) 9 B) 5 C) –5 D) –9
Answer: A

255) 10 – |–5|
A) –15 B) 15 C) 5 D) –5
Answer: C

256) |4| + |7|
A) 11 B) 3 C) –3 D) –11
Answer: A

Perform the indicated operations.

257) 5 – 13 + 12
A) 4 B) 6 C) –20 D) 30
Answer: A

258) 4 + 15 – 12
A) 1 B) –23 C) 31 D) 7
Answer: D

259) 10 + 11 – 13
A) 8 B) –14 C) 34 D) 12
Answer: A

260) –15 + (13 – 2) – 1
A) –3 B) –1 C) 1 D) –5
Answer: D

261) 8 + 6 – (–10 + 11)
A) 13 B) 1 C) 23 D) 35
Answer: A

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262) $13 - (5 + 13) + 2$

A) 19 B) 23 C) –3 D) –7

Answer: C

263) $\left(-\frac{1}{6} - \frac{1}{3}\right) - \left(-\frac{1}{3}\right)$

A) –1 B) $\frac{1}{6}$ C) $-\frac{1}{6}$ D) $-\frac{1}{3}$

Answer: C

264) $(-9 + 6.28) - (-0.72)$

A) –2 B) 14.56 C) 16 D) –3.44

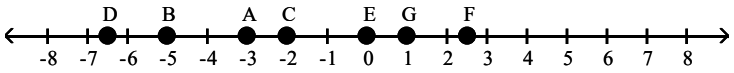
Answer: A

265) $|-7| + |-4| - |-3| - |7|$

A) 7 B) 1 C) 21 D) –15

Answer: B

Find the distance between the given points.



266) A and B

A) 0 B) 8 C) 2 D) 1

Answer: C

267) D and B

A) $\frac{3}{2}$ B) $-\frac{23}{2}$ C) $-\frac{3}{2}$ D) $\frac{23}{2}$

Answer: A

Perform the indicated operation.

268) $-10(-9)$

A) 100 B) 80 C) –90 D) 90

Answer: D

269) $10(-10)$

A) –110 B) –100 C) 110 D) 100

Answer: B

270) $\frac{-84}{-7}$

A) –12 B) 2 C) $\frac{1}{12}$ D) 12

Answer: D

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271) $\frac{9}{0}$

A) 0 B) 1 C) 9 D) Undefined

Answer: D

272) $\frac{-64}{4}$

A) 16 B) $-\frac{1}{16}$ C) $\frac{1}{16}$ D) –16

Answer: D

273) $\frac{168}{-7}$

A) $-\frac{1}{24}$ B) 24 C) $\frac{1}{24}$ D) –24

Answer: D

274) $\frac{0}{-16}$

A) Undefined B) –16 C) 16 D) 0

Answer: D

275) $14\left(-\frac{4}{63}\right)$

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

Answer: A

276) $-10\left(-\frac{4}{35}\right)$

A) $-\frac{7}{8}$ B) $-\frac{8}{7}$ C) $\frac{8}{7}$ D) $\frac{7}{8}$

Answer: C

277) $\frac{25}{36}(-20)$

A) $\frac{125}{9}$ B) $-\frac{9}{125}$ C) $-\frac{125}{9}$ D) $\frac{9}{125}$

Answer: C

278) $\frac{3}{4}\left(-\frac{5}{9}\right)$

A) $-\frac{5}{12}$ B) $\frac{5}{12}$ C) $\frac{47}{36}$ D) $-\frac{47}{36}$

Answer: A

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279) $-\frac{5}{4}\left(-\frac{7}{45}\right)$

A) $\frac{7}{36}$ B) $-\frac{253}{180}$ C) $-\frac{7}{36}$ D) $\frac{253}{180}$

Answer: A

280) $-\frac{1}{6}\left(\frac{1}{8}\right)\left(-\frac{2}{5}\right)$

A) $-\frac{1}{144}$ B) $-\frac{1}{120}$ C) $\frac{1}{120}$ D) $\frac{1}{144}$

Answer: C

281) $6 \div \left(-\frac{10}{9}\right)$

A) $\frac{5}{27}$ B) $\frac{27}{5}$ C) $-\frac{27}{5}$ D) $-\frac{5}{27}$

Answer: C

282) $-\frac{9}{13} \div \left(-\frac{3}{5}\right)$

A) $-\frac{13}{15}$ B) $\frac{27}{65}$ C) $-\frac{15}{13}$ D) $\frac{15}{13}$

Answer: D

283) $\frac{-\frac{16}{21}}{\frac{1}{28}}$

A) $\frac{64}{3}$ B) $-\frac{3}{64}$ C) $-\frac{64}{3}$ D) $\frac{3}{64}$

Answer: C

Perform the indicated operation. Round to the nearest hundredth, if necessary.

284) $\frac{-0.3}{-0.5}$

A) −0.6 B) 0.15 C) −0.5 D) 0.6

Answer: D

285) $\frac{0.6}{0.2}$

A) $\frac{1}{3}$ B) 4 C) 3 D) 0.4

Answer: C

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286) $\frac{0.6}{-4.65}$

A) −2.79 B) −3.95 C) −4.05 D) −0.13

Answer: D

287) $\frac{-4.5}{0.09}$

A) −4.41 B) $-\frac{1}{50}$ C) −50 D) −44.1

Answer: C

288) (−11.5)(11.4)

A) −1.311 B) −13.11 C) −131.1 D) −1311

Answer: C

289) (18.9)(0.02)

A) 3.78 B) 0.0378 C) 0.378 D) 0.00378

Answer: C

290) (2.76)(4.83)

A) 1.333 B) 0.1333 C) 133.3 D) 13.33

Answer: D

291) (1.9)(6.7)(−9.8)

A) 386.7374 B) 124.754 C) −124.754 D) −386.7374

Answer: C

Solve the problem.

292) The stock market gained 17 points on Tuesday and lost 55 points on Wednesday. Find the difference between these changes.

A) 72 points B) −72 points C) 38 points D) −38 points

Answer: A

293) Nikki is fishing from a bank 29 feet above water level. In this location, the fish tend to feed at 48 feet below the surface. How long must Nikki's fish line be to reach the fish?

A) 19 feet B) −29 feet C) −19 feet D) 77 feet

Answer: D

294) Wayne has $22.87 in his wallet. Janice has a debt note for $29.26 in her wallet. Find the difference between these amounts.

A) −$6.39 B) −$52.13 C) $6.39 D) $52.13

Answer: D

295) Company A showed a profit of $67,600 last year, while Company B had a loss of $80,690. Find the difference between these amounts.

A) $148,290 B) $13,090 C) −$13,090 D) −$148,290

Answer: A

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296) The temperature at a science station was –32° at 8 am. At 3 pm, it was 21°. By how many degrees did the temperature rise?

A) by –53° B) by –11° C) by 53° D) by 11°

Answer: C

297) The ocean surface is at 0 ft elevation. A diver is underwater at an elevation of –178 ft near a rock formation. In this area, the ocean floor has an elevation of –214 ft. The rock formation rises to a peak 131 above the ocean floor. How many feet below the top of the rock formation is the diver?

A) 83 ft B) 47 ft C) 95 ft D) 36 ft

Answer: C

298) After one round in a card game, your score was –6 points. After the second round, your total score was 23 points. How many points did you gain in the second game?

A) –17 points B) 23 points C) 29 points D) 17 points

Answer: C

299) In a certain location, the highest temperature recorded was 104°F. The lowest temperature recorded was 140 degrees less than the highest. What was the lowest temperature?

A) 0°F B) –36°F C) –138°F D) 36°F

Answer: B

300) The two charts show the weight gain of some people and the weight loss of other people. Use the information given to answer the questions 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 Ed?

A) 874 grams B) –5228 grams C) 5228 grams D) –874 grams

Answer: C

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

How much more weight did Don lose than Frank?

A) –3815 grams B) –2101 grams C) 3815 grams D) 2101 grams

Answer: D

Decide whether the statement is always true, sometimes true, or never true.

302) The sum of two negative numbers is negative.

A) Always true B) Sometimes true C) Never true

Answer: A

303) The sum of two positive numbers is positive.

A) Sometimes true B) Always true C) Never true

Answer: B

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304) The sum of a negative number and a positive number is negative.
A) Always true B) Never true C) Sometimes true
Answer: C

305) The product of two numbers with like signs is negative.
A) Always true B) Never true C) Sometimes true
Answer: B

306) The product of two numbers with different signs is positive.
A) Sometimes true B) Always true C) Never true
Answer: C

307) The difference between two positive numbers is positive.
A) Never true B) Always true C) Sometimes true
Answer: C

308) The difference between two negative numbers is negative.
A) Never true B) Always true C) Sometimes true
Answer: C

309) The difference between a positive number and a negative number is positive.
A) Never true B) Sometimes true C) Always true
Answer: B

310) The sum of a positive number and a negative number is 0.
A) Never true B) Sometimes true C) Always true
Answer: B

311) The difference between a positive number and a negative number is 0.
A) Never true B) Always true C) Sometimes true
Answer: A

Write the expression by using exponents.

312) $9 \cdot 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9$
A) 6^9 B) 9^5 C) 54 D) 9^6
Answer: D

313) $x \cdot x \cdot x \cdot x \cdot x$
A) 5^x B) 5(x) C) 5 D) x^5
Answer: D

314) $\frac{2}{5} \cdot \frac{2}{5} \cdot \frac{2}{5} \cdot \frac{2}{5} \cdot \frac{2}{5} \cdot \frac{2}{5} \cdot \frac{2}{5}$
A) $\frac{14}{5}$ B) $\left(\frac{2}{5}\right)^7$ C) $8^{2/5}$ D) $\left(\frac{2}{5}\right)^8$
Answer: B

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315) $(-3)(-3)(-3)(-3)(-3)$

A) -15 B) 5^{-3} C) $(-3)^5$ D) 3^5

Answer: C

Evaluate the expression.

316) $(-4)^2$

A) -8 B) 8 C) 16 D) -16

Answer: C

317) 5^9

A) -45 B) 45 C) $-1{,}953{,}125$ D) 1,953,125

Answer: D

318) -3^2

A) -8 B) -6 C) -9 D) 9

Answer: C

319) $\left(\frac{7}{5}\right)^3$

A) $\frac{2401}{625}$ B) $\frac{343}{5}$ C) $\frac{49}{25}$ D) $\frac{343}{125}$

Answer: D

320) $\left(-\frac{1}{2}\right)^6$

A) $\frac{1}{64}$ B) $-\frac{1}{64}$ C) -64 D) 64

Answer: A

321) -10^5

A) $-100{,}000$ B) 1,000,000 C) $-1{,}000{,}000$ D) 100,000

Answer: A

322) 0.82^3

A) 2.46 B) 0.551368 C) 0.6724 D) 0.551379

Answer: B

323) $(-3)^3$

A) 9 B) 27 C) -27 D) -9

Answer: C

Find the square root. If it is not a real number, say so.

324) $\sqrt{361}$

A) 130,321 B) 21 C) 38 D) 19

Answer: D

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325) $-\sqrt{361}$

A) 38 B) Not a real number C) –19 D) 19

Answer: C

326) $\sqrt{\frac{1}{81}}$

A) $\frac{1}{4}$ B) $\frac{1}{9}$ C) $-\frac{1}{9}$ D) 9

Answer: B

327) $\sqrt{\frac{121}{169}}$

A) $\frac{13}{11}$ B) $\frac{11}{13}$ C) $\frac{11}{\sqrt{169}}$ D) $\frac{\sqrt{121}}{13}$

Answer: B

328) $\sqrt{-64}$

A) Not a real number B) –8 C) 16 D) 8

Answer: A

329) $-\sqrt{\frac{1}{64}}$

A) Not a real number B) $-\frac{1}{8}$ C) $\frac{1}{8}$ D) $\frac{1}{4}$

Answer: B

330) $\sqrt{0.09}$

A) 0.3 B) 0.03 C) 0.045 D) 0.003

Answer: A

Use the order of operations to simplify the expression.

331) $11 + 20 \cdot 19$

A) 239 B) 589 C) 391 D) 50

Answer: C

332) $8 \cdot 7 - 18 \div 3$

A) 50 B) $\frac{38}{3}$ C) 0 D) 62

Answer: A

333) $19 + (29 \cdot 10) - 18$

A) 462 B) –384 C) 40 D) 291

Answer: D

334) $(26 + 16) \cdot (25 - 2)$

A) 1048 B) 966 C) 1.83 D) 65

Answer: B

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335) $(-5)(3)^4 - (-5)(-6)$

A) −405 B) −435 C) 30 D) −375

Answer: B

336) $(-3)(\sqrt{64}) - (-2)(-8)$

A) 16 B) −8 C) −40 D) −24

Answer: C

337) $(-5 - 3)(-5 + 7) - 3^2$

A) −25 B) 2 C) −7 D) 9

Answer: A

338) $12 + 6^2(7) - (-5)$

A) 341 B) 30 C) 49 D) 269

Answer: D

339) $2(2 - 2|1 - 6|)$

A) 24 B) −18 C) −6 D) −16

Answer: D

340) $-|-18| - |-22 - 21|$

A) 25 B) 61 C) −25 D) −61

Answer: D

341) $-9 + (5 \cdot 3 + 40) \div 5$

A) −6 B) 2 C) 14 D) −2

Answer: B

342) $\dfrac{5 \cdot (2 + 8) + 5 \cdot 3}{5 \cdot (8 - 1)}$

A) $\dfrac{13}{7}$ B) 109 C) 2 D) $\dfrac{20}{7}$

Answer: A

343) $\dfrac{4 \cdot (8 - 2) + 4 \cdot 4}{4 \cdot (4 - 1)}$

A) 2 B) $\dfrac{13}{3}$ C) 135 D) $\dfrac{10}{3}$

Answer: D

344) $\dfrac{(-7) \cdot (8 + 6) + (-7) \cdot 4}{(-7) \cdot (8 - 1)}$

A) 2 B) 314 C) $\dfrac{18}{7}$ D) $\dfrac{25}{7}$

Answer: C

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345) $\dfrac{\frac{5}{9} \cdot 12 + 6}{-\frac{1}{2} \cdot 8 - 12}$

A) $\frac{19}{3}$ B) $-\frac{5}{8}$ C) $-\frac{19}{24}$ D) 5

Answer: C

346) $\dfrac{4(-6) - (2)5^4}{4 - \sqrt{64} + 10}$

A) $-\frac{8125}{3}$ B) $-\frac{5012}{3}$ C) $-\frac{637}{3}$ D) $-\frac{10000}{3}$

Answer: C

347) $\dfrac{5(2 + 1) - 7(1 + 1)}{5(4 - 2) - 2^3}$

A) $\frac{1}{6}$ B) 4 C) $\frac{1}{8}$ D) $\frac{1}{2}$

Answer: D

348) $\dfrac{2 - 5\left(\dfrac{-6 - 10}{-8}\right) - 5}{-32 - 9 + 42}$

A) $-\frac{13}{42}$ B) 7 C) –83 D) –13

Answer: D

Evaluate the expression for a = –5, b = 16 and c = 7.

349) $\sqrt{b} + \dfrac{55}{a}$

A) 17 B) –9 C) –7 D) 61

Answer: C

350) 5(5c – 2b)

A) 15 B) 335 C) 185 D) 161

Answer: A

351) $abc + b^2$

A) 114 B) –304 C) –108 D) –114

Answer: B

352) 9ab + 4c

A) –740 B) 127 C) –145 D) –692

Answer: D

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353) $6b + \frac{70}{a} - \sqrt{b}$

A) 82 B) 352 C) 78 D) 328

Answer: C

354) $\frac{2c - a^2}{5a + c^2}$

A) $-\frac{11}{24}$ B) $\frac{11}{74}$ C) $\frac{13}{8}$ D) $-\frac{11}{74}$

Answer: A

Solve the problem.

355) Suppose that the blood alcohol concentration (BAC) of a person who has been drinking is given by the following: total oz consumed × % alcohol × 0.075 ÷ body weight in lb − hr of drinking × 0.015. Find the BAC for a 155−lb woman who, in 3 hr, has drunk 9 beers. (Assume that each beer is 12 oz with a 3.5% alcohol content.) Round your answer to the nearest thousandth.

A) 0.133 B) 0.138 C) 0.183 D) 0.168

Answer: B

356) Suppose that the blood alcohol concentration (BAC) of a person who has been drinking is given by the following: total oz consumed × % alcohol × 0.075 ÷ body weight in lb − hr of drinking × 0.015. Find the BAC for a 235−lb man who, in 3 hr, has drunk 7 beers. (Assume that each beer is 12 oz with a 4.4% alcohol content.) Round your answer to the nearest thousandth.

A) 0.118 B) 0.073 C) 0.068 D) 0.103

Answer: B

357) An approximation of the amount in billions of dollars that Americans have spent on their pets from 1993 to 2006 can be obtained by substituting a given year for x in the expression 1.753x − 3337. Approximate the amount spent in 1993. Round the answer to the nearest tenth.

A) $6825.7 billion B) $157.7 billion C) $156.7 billion D) $3650.5 billion

Answer: C

358) An approximation of the amount in billions of dollars that Americans have spent on their pets from 1992 to 2006 can be obtained by substituting a given year for x in the expression 1.742x − 3302. How has the amount Americans have spent on their pets changed from 1992 to 2006?

A) It has increased a little. B) It has largely increased.
C) It has decreased. D) It does not really change.

Answer: B

Decide whether the statement is true or false.

359) $(-3)^8$ is a negative number.

A) False B) True

Answer: A

360) $(-7)^7$ is a positive number.

A) True B) False

Answer: B

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361) The product of 8 positive factors and 4 negative factors is positive.
A) True B) False
Answer: A

362) The product of 9 positive factors and 3 negative factors is positive.
A) True B) False
Answer: B

363) $-6^4 = (-6)^4$
A) True B) False
Answer: B

364) $-13^{11} = (-13)^{11}$
A) False B) True
Answer: B

365) In the exponential -11^9, -11 is the base.
A) False B) True
Answer: A

366) $\sqrt[9]{a}$ has the same sign as a for all nonzero real numbers a.
A) False B) True
Answer: B

Simplify the expression.

367) $12b + 9b$
A) $3b$ B) $-3b$ C) $3b^2$ D) $21b$
Answer: D

368) $-11y + (-5y)$
A) $-6y$ B) $16y$ C) $-16y^2$ D) $-16y$
Answer: D

369) $-9(11z + m)$
A) $-99z + 9m$ B) $99z - 9m$ C) $-99z - 9m$ D) $99z - m$
Answer: C

370) $-10(6z + 2m)$
A) $60z - 2m$ B) $-60z + 20m$ C) $60z - 20m$ D) $-60z - 20m$
Answer: D

371) $-4b + 2b$
A) $-2b^2$ B) $-2b$ C) $-6b$ D) $2b$
Answer: B

372) $-8z - (-5z)$
A) $-13z$ B) $3z$ C) $-3z^2$ D) $-3z$
Answer: D

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373) –(–7m) – (–5m)
A) 12m B) 2m C) –2m D) –12m
Answer: A

374) –2s – 10t
A) –12s B) –12t
C) –12st D) Cannot be simplified
Answer: D

375) 11a – 7a + 4
A) –4a + 4 B) 4a + 4 C) 8a D) 18a + 4
Answer: B

376) 8a – 5a + a – 9
A) 3a – 8 B) 3a + a – 9 C) 4a – 9 D) 3a – 9
Answer: C

377) 6x + 5 + 3x + x + 6
A) 9x + 11 B) 8x + 11 C) 9x – 11 D) 10x + 11
Answer: D

378) –3(2x – 8) – 4x + 7
A) –10x + 31 B) 2x + 31 C) –10x – 17 D) 10x + 31
Answer: A

379) –6(4m + 6) – 5(2m + 4)
A) 6m – 56 B) –34m + 56 C) –34m + 10 D) –34m – 56
Answer: D

380) 6(4t + 4) – 4(4t – 5) + 2t
A) 20t – 1 B) 10t + 44 C) 20t + 44 D) 10t + 4
Answer: B

381) 2c + 6(3c – 6) + 3(2c + 2) + 4c + 6
A) 30c + 2 B) 99c + 2 C) 99c – 24 D) 30c – 24
Answer: D

382) 5p + 3(4p + 2) + 4(2p + 5) + 4(4p – 2)
A) 41p + 5 B) 165p + 5 C) 165p + 18 D) 41p + 18
Answer: D

383) 7x – (2x – 5) – (–6x + 1)
A) 11x + 4 B) 11x + 6 C) 15x + 4 D) 11x – 6
Answer: A

384) 0.5(18 + 8x) – 0.125(40 + 8x)
A) 3x + 4 B) 7x – 14 C) 4x – 4 D) 5x + 4
Answer: A

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Use the indicated property to write a new expression equal to the given one. Simplify the expression if possible.

385) $4 + x$; commutative

A) $x + 4$ B) $x - 4$ C) $4 - x$ D) $-x - 4$

Answer: A

386) $y + 0$; identity

A) $0 + y$ B) 0 C) y D) 1

Answer: C

387) $3(r + k)$; distributive

A) $r(3 + k)$ B) $3r - 3k$ C) $3r + 3k$ D) $3r + k$

Answer: C

388) $8 \cdot \frac{1}{8}$; inverse

A) 1 B) –1 C) 8 D) 64

Answer: A

389) $3 + (-3)$; inverse

A) 6 B) 9 C) 0 D) –6

Answer: C

390) $-6 \cdot 1$; identity

A) –1 B) 1 C) 6 D) –6

Answer: D

391) $(2x + 2y) + 9z$; associative

A) $2x + (2y + 9z)$ B) $2x + 2y + 9z$ C) $(2y + 2x) + 9z$ D) $(2x + 2y + 9z)$

Answer: A

392) $9(8x)$; associative

A) $17x$ B) $72 + 9x$ C) $(8x)9$ D) $72x$

Answer: D

393) $0(2r - 164s + 0.3t)$; multiplication property of 0

A) $2r - 164s + 0.3t$ B) $-161.7rst$ C) 1 D) 0

Answer: D

Use the distributive property to calculate the value mentally.

394) $6 \cdot 42 + 94 \cdot 42$

A) 3696 B) 142 C) 8400 D) 4200

Answer: D

395) $42 \cdot 7 + 42 \cdot 43$

A) 1512 B) 4200 C) 92 D) 2100

Answer: D

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396) $32 \cdot \frac{3}{2} - 12 \cdot \frac{3}{2}$

A) 30 B) 81 C) 15 D) 66

Answer: A

397) 3.57(16) – 3.57(6)

A) 14.28 B) 71.4 C) 78.54 D) 35.7

Answer: D

398) 1.28(26) + 1.28(74)

A) 128 B) 61.44 C) 107.28 D) 256

Answer: A

399) $\frac{8}{7}(33) + \frac{8}{7}(37)$

A) 80 B) 40 C) $\frac{32}{7}$ D) 160

Answer: A

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

Provide an appropriate response.

400) Explain what happens when an integer is multiplied by 1, –1, and 0. Which one is the multiplicative identity for integers?

Answer: An integer multiplied by 1 gives the same integer. Multiplied by –1 gives the opposite of the integer. Multiplied by 0 gives 0. 1 is the multiplicative identity.

401) Is subtraction commutative? Explain.

Answer: No. The order of the numbers is important.

402) Use an example to explain the difference between the associative and commutative properties of multiplication.

Answer: Answers will vary.

403) Is it always true that $c + (a \cdot b) = (c + a)(c + b)$, where a, b, and c are real numbers? If not, provide an example that shows the statement is false.

Answer: It is not true. $3 + (4 \cdot 5) \neq (3+4)(3+5)$

404) Explain how you can use the distributive property to help you evaluate 194·50.

Answer: Answers will vary. You might rewrite the problem as (190 + 4)50 or (200 – 6)50, which, by use of the distributive property, would result in adding two products that could be found by inspection.

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

405) Which property justifies the statement?

$8 \cdot 1 = 8$

A) Inverse property B) Distributive property

C) Commutative property D) Identity property

Answer: D

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406) Which property justifies the statement?
$(7 + 2) + 9 = (2 + 7) + 9$

A) Commutative property
B) Distributive property
C) Associative property
D) Inverse property

Answer: A

407) Which property justifies the statement?
$2(x + 8) = 2x + 2 \cdot 8$

A) Commutative property
B) Distributive property
C) Identity property
D) Associative property

Answer: B

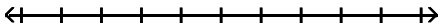
408) Which property justifies the statement?
$(1 \cdot 8) \cdot 9 = 1 \cdot (8 \cdot 9)$

A) Distributive property
B) Associative property
C) Commutative property
D) Identity property

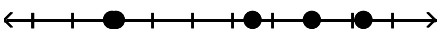
Answer: B

Solve.

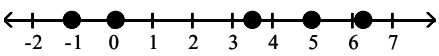
409) Graph $\left\{-1, 0.09, \frac{7}{2}, 5, \frac{63}{10}\right\}$ on a number line.



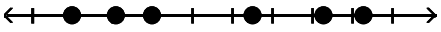
A)



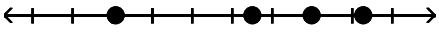
B)



C)



D)



Answer: B

List the elements from A that belong to the set.

410) $A = \left\{-\sqrt{6}, -7, -0.4, 0, \sqrt{16}, \frac{14}{2}, 11, \sqrt{-6}\right\}$

Whole numbers

A) 0, $\sqrt{16}$ (or 4), 11
B) 0, $\sqrt{16}$ (or 4), $\frac{14}{2}$ (or 7), 11
C) $\sqrt{16}$ (or 4), $\frac{14}{2}$ (or 7), 11
D) 0, 11

Answer: B

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411) $A = \left\{-\sqrt{6}, -8, -0.53, 0, \sqrt{4}, \frac{18}{3}, 16, \sqrt{-6}\right\}$

Integers

A) $-8, 0, \frac{18}{3}$ (or 6), 16

B) $0, \sqrt{4}$ (or 2), $\frac{18}{3}$ (or 6), 16

C) $0, \sqrt{4}$ (or 2), 16

D) $-8, 0, \sqrt{4}$ (or 2), $\frac{18}{3}$ (or 6), 16

Answer: D

412) $A = \left\{-\sqrt{5}, -3, -0.31, 0, \sqrt{25}, \frac{21}{3}, 20, \sqrt{-7}\right\}$

Rational numbers

A) $-3, -0.31, 0, \frac{21}{3}$ (or 7) , 20

B) $-3, -0.31, 0, \sqrt{25}$ (or 5), $\frac{21}{3}$ (or 7) , 20

C) $0, \sqrt{25}$ (or 5), $\frac{21}{3}$ (or 7) , 20

D) $-3, 0, \sqrt{25}$ (or 5), $\frac{21}{3}$ (or 7) , 20

Answer: B

413) $A = \left\{-\sqrt{6}, -2, -0.73, 0, \sqrt{9}, \frac{24}{4}, 20, \sqrt{-7}\right\}$

Real numbers

A) $-2, -0.73, 0, \sqrt{9}$ (or 3), $\frac{24}{4}$ (or 6) , $20, \sqrt{-7}$

B) $-2, -0.73, 0, \sqrt{9}$ (or 3), $\frac{24}{4}$ (or 6) , 20

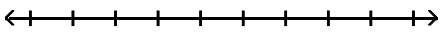
C) $-\sqrt{6}, -2, -0.73, 0, \sqrt{9}$ (or 3), $\frac{24}{4}$ (or 6) , $20, \sqrt{-7}$

D) All are real numbers except $\sqrt{-7}$

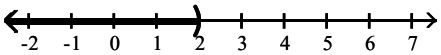
Answer: D

Write the set in interval notation and graph the interval.

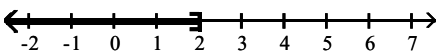
414) $\{x \mid x < 2\}$



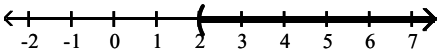
A) $(-\infty, 2)$



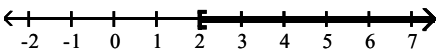
B) $(-\infty, 2]$



C) $(2, \infty)$



D) $[2, \infty)$



Answer: A

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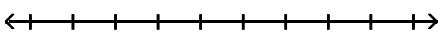
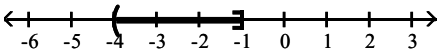
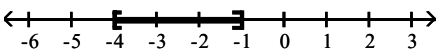
415) $\{x \mid -4 < x \leq -1\}$



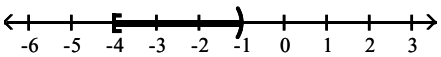
A) $(-4, -1]$



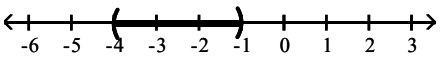
B) $[-4, -1]$



C) $[-4, -1)$



D) $(-4, -1)$



Answer: A

Perform the indicated operations.

416) $-(-5) - 2 + 13 - 15$

A) 21 B) 1 C) –5 D) –9

Answer: B

417) $1 - 5 \cdot 7 + 3(-6)$

A) –52 B) 18 C) –16 D) 54

Answer: A

418) $-7 - 18^2 + 9(5) + (-18)^2$

A) 38 B) 18 C) 315 D) 52

Answer: A

419) $\dfrac{2 - 24 + (-5)}{\sqrt{25}(-8)}$

A) $\dfrac{27}{40}$ B) $-\dfrac{27}{13}$ C) $-\dfrac{27}{40}$ D) $\dfrac{27}{13}$

Answer: A

420) $\dfrac{-3[6 - (-2 - 5) + 1]}{\sqrt{36}(-1) - (-3)}$

A) 14 B) – 14 C) – 4 D) $-\dfrac{4}{3}$

Answer: A

421) $\dfrac{3 \cdot 6 - 4^2 \cdot 2 - 7(-3)}{-4 \cdot 7^2 + 3}$

A) $-\dfrac{71}{193}$ B) $\dfrac{35}{193}$ C) $-\dfrac{7}{193}$ D) $\dfrac{7}{199}$

Answer: C

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Solve the problem.

422) The table shows the heights in feet of some mountains and the depths in feet (as negative number) of some ocean trenches.

Mountain	Height	Trench	Depth
A	17,500	P	–31,984
B	16,324	Q	–23,718
C	17,016	R	–22,301

What is the difference between the height of mountain C and the depth of trench P?

A) –14,968 ft B) 49,000 ft C) –49,000 ft D) 14,968 ft

Answer: B

423) The table shows the heights in feet of some mountains and the depths in feet (as negative number) of some ocean trenches.

Mountain	Height	Trench	Depth
A	14,300	P	–34,901
B	16,432	Q	–33,661
C	17,443	R	–23,328

How much deeper is the trench Q than the trench R?

A) 56,989 ft B) 10,333 ft C) –56,989 ft D) –10,333 ft

Answer: B

Find the square root. If the number is not real, say so.

424) $\sqrt{576}$

A) 48 B) 24 C) 331,776 D) 26

Answer: B

425) $-\sqrt{529}$

A) 46 B) Not a real number C) 23 D) –23

Answer: D

426) $\sqrt{-324}$

A) Not a real number B) –18 C) 36 D) 18

Answer: A

Answer the question.

427) For the expression $\sqrt{a}$, under what conditions will its value be positive?

A) a must be negative B) a must be positive C) a must be real D) a must be 0

Answer: B

Evaluate.

428) $\frac{7k - m^2}{n + (-5)r}$; $k = 5, m = 10, n = 7, r = 10$

A) $-\frac{135}{43}$ B) $\frac{88}{43}$ C) $-\frac{65}{57}$ D) $\frac{65}{43}$

Answer: D

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Simplify.

429) $-2(6k - 4) + 2(3k - 5) - 9 + 5k$

A) $-11k - 11$ B) $-1k - 11$ C) $-11k + 9$ D) $-1k - 27$

Answer: B

Answer the question.

430) How does the subtraction sign affect the terms $-4x + 9$ when $9x - 4 - (-4x + 9)$ is simplified? What is the simplified form?

A) It changes the sign of each term. The simplified form is $13x - 13$.
B) It changes the sign of each term. The simplified form is $5x - 13$.
C) It changes the sign of each term. The simplified form is $13x + 9$.
D) It changes the sign of each term. The simplified form is $9x - 13$.

Answer: A

Find the appropriate property for the statement.

431) $5 + (-5) = 0$

A) Inverse property B) Associative property
C) Commutative property D) Identity property

Answer: A

432) $-6 + (9 + 7) = (-6 + 9) + 7$

A) Identity property B) Commutative property
C) Associative property D) Distributive property

Answer: C

433) $6x + 4x = (6 + 4)x$

A) Associative property B) Commutative property
C) Distributive property D) Identity property

Answer: C

434) $8 \cdot 0 = 0$

A) Commutative property B) Multiplication property of 0
C) Inverse property D) Identity property

Answer: B

435) $-4 + 0 = -4$

A) Inverse property B) Commutative property
C) Associative property D) Identity property

Answer: D

436) $9 \cdot 1 = 9$

A) Inverse property B) Distributive property
C) Commutative property D) Identity property

Answer: D

437) $(7 + 4) + 6 = (4 + 7) + 6$

A) Associative property B) Identity property
C) Distributive property D) Commutative property

Answer: D

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

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

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101) D
102) A
103) B
104) A
105) C
106) A
107) B
108) A
109) C
110) B
111) D
112) B
113) C
114) C
115) B
116) D
117) A
118) D
119) C
120) A
121) D
122) D
123) D
124) D
125) A
126) D
127) C
128) A
129) B
130) A
131) C
132) A
133) C
134) A
135) B
136) A
137) A
138) D
139) D
140) D
141) B
142) A
143) D
144) A
145) B
146) A
147) B
148) B
149) A
150) A

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151) B
152) B
153) B
154) C
155) A
156) B
157) A
158) B
159) B
160) A
161) C
162) A
163) B
164) C
165) C
166) B
167) D
168) D
169) D
170) A
171) A
172) B
173) A
174) D
175) B
176) A
177) A
178) B
179) A
180) A
181) B
182) B
183) B
184) C
185) D
186) D
187) A
188) D
189) C
190) A
191) B
192) A
193) B
194) C
195) C
196) D
197) B
198) A
199) A
200) B

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201) A
202) B
203) B
204) D
205) D
206) B
207) D
208) D
209) B
210) B
211) D
212) C
213) C
214) C
215) B
216) B
217) C
218) B
219) C
220) B
221) A
222) A
223) A
224) "$8 < x < 5$" means "$x < 5$ and $x > 8$"
225) The student is correct because the sets contain exactly the same elements. The order the elements appear is not important.
226) No, the number zero is an element of the set {0}, hence the set has one element.
227) A
228) A
229) C
230) D
231) D
232) D
233) B
234) A
235) B
236) D
237) A
238) D
239) A
240) A
241) C
242) B
243) B
244) C
245) D
246) D
247) C
248) C
249) A

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250) B
251) B
252) A
253) A
254) A
255) C
256) A
257) A
258) D
259) A
260) D
261) A
262) C
263) C
264) A
265) B
266) C
267) A
268) D
269) B
270) D
271) D
272) D
273) D
274) D
275) A
276) C
277) C
278) A
279) A
280) C
281) C
282) D
283) C
284) D
285) C
286) D
287) C
288) C
289) C
290) D
291) C
292) A
293) D
294) D
295) A
296) C
297) C
298) C
299) B

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300) C
301) D
302) A
303) B
304) C
305) B
306) C
307) C
308) C
309) B
310) B
311) A
312) D
313) D
314) B
315) C
316) C
317) D
318) C
319) D
320) A
321) A
322) B
323) C
324) D
325) C
326) B
327) B
328) A
329) B
330) A
331) C
332) A
333) D
334) B
335) B
336) C
337) A
338) D
339) D
340) D
341) B
342) A
343) D
344) C
345) C
346) C
347) D
348) D
349) C

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350) A
351) B
352) D
353) C
354) A
355) B
356) B
357) C
358) B
359) A
360) B
361) A
362) B
363) B
364) B
365) A
366) B
367) D
368) D
369) C
370) D
371) B
372) D
373) A
374) D
375) B
376) C
377) D
378) A
379) D
380) B
381) D
382) D
383) A
384) A
385) A
386) C
387) C
388) A
389) C
390) D
391) A
392) D
393) D
394) D
395) D
396) A
397) D
398) A
399) A

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400) An integer multiplied by 1 gives the same integer. Multiplied by –1 gives the opposite of the integer. Multiplied by 0 gives 0. 1 is the multiplicative identity.
401) No. The order of the numbers is important.
402) Answers will vary.
403) It is not true. $3 + (4 \cdot 5) \neq (3+4)(3+5)$
404) Answers will vary. You might rewrite the problem as (190 + 4)50 or (200 – 6)50, which, by use of the distributive property, would result in adding two products that could be found by inspection.
405) D
406) A
407) B
408) B
409) B
410) B
411) D
412) B
413) D
414) A
415) A
416) B
417) A
418) A
419) A
420) A
421) C
422) B
423) B
424) B
425) D
426) A
427) B
428) D
429) B
430) A
431) A
432) C
433) C
434) B
435) D
436) D
437) D

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