TEST BANK

NINTH EDITION

COLLEGE MATHEMATICS

CHERYL CLEAVES • MARGIE HOBBS

WELDING

CULINARY ARTS

HVAC

DRAFTING

ARCHITECTURE

ALLIED HEALTH

CARPENTRY

BUSINESS AND FINANCE

POLICE SCIENCE

PLUMBING

ELECTRICAL TRADES

FIRE PROTECTION

OFFICE SERVICES

AUTOMOTIVE TRADES

CONSTRUCTION

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

1) By examining the last digit of 3,455 only, which number is it divisible by?   1) _____
    A) 5   B) 4   C) 9   D) 6

2) 6, 9, and 18 are all multiples of which number?   2) _____
    A) 2   B) 6   C) 3   D) 972

3) By only examining the last two digits of 6,380, which number is it divisible by?   3) _____
    A) 9   B) 4   C) 2   D) 8

4) Which rule guarantees 927 is divisible by 3?   4) _____
    A) The last digit is even and 24 is divisible by 6.
    B) The last digit is even and the sum of the digits is divisible by 3.
    C) The last two digits are even.
    D) The sum of the digits is divisible by 3.

5) Which basic arithmetic operation is implied when you use the word "factor"?   5) _____
    A) Subtraction   B) Addition
    C) Division   D) Multiplication

6) Which rule guarantees 4,150 is divisible by 5?   6) _____
    A) At least two of the digits are even.
    B) There are two consecutive digits that are divisible by 8.
    C) The last three digits form a number divisible by 5.
    D) The last digit is a zero.

7) 140 is divisible by which two numbers?   7) _____
    A) 5 and 3   B) 2 and 7   C) 2 and 9   D) 10 and 8

8) Identify the list that is a list of multiples of 25.   8) _____
    A) 25, 50, 75, 140, 175   B) 25, 75, 125, 155, 175
    C) 25, 50, 100, 270, 400   D) 25, 50, 75, 100, 125

9) 3, 6, and 9 are multiples of which number?   9) _____
    A) 9   B) 2   C) 3   D) 6

10) Which of the following numbers is a composite number?   10) _____
    A) 61   B) 34   C) 47   D) 53

11) Which is a list of the factors of 21?   11) _____
    A) 3, 6, 9, 12, 15, 18   B) 1, 3, 7, 21
    C) 1, 2, 3, 6, 9, 18   D) 2, 4, 6, 8, 10, 12, 14, 16, 18

12) 1 and 30, 2 and 15, 3 and 10, and 5 and 6 are all factor pairs of which number?   12) _____
    A) 3   B) 131,056   C) 60   D) 30

13) Which of the following is not a factor of 348?   13) _____
    A) 34   B) 4   C) 8   D) 2

14) Which list contains all the factor pairs of 36?   14) _____
    A) 1(36), 2(18), 4(9)   B) 1(36), 6(6)
    C) 1(36), 2 (18), 3(12) , 4(9), 6(6)   D) 1(36), 2 (18), 3(12) , 6(6)

15) 15 is not a prime number because   15) _____
    A) its factor pairs are 3 × 5.
    B) it has 1 as a factor.
    C) its factor pairs are 1 × 15, 3 × 5.
    D) 15 is not divisible by any number except 1 and itself.

16) Which of the following is a prime number?   16) _____
    A) 55   B) 29   C) 39   D) 42

17) List the factor pairs of 36 and write all the factors in order from smallest to   17) _____
largest.
    A) 1 × 36, 6 × 6; 1, 6, 36
    B) 1 × 36; 1, 2, 3, 4, 6, 9, 12, 18, 36
    C) 1 × 36, 2 × 18, 3 × 12, 4 × 9, 6 × 6; 1, 2, 3, 4, 6, 9, 12, 18, 36
    D) 1 × 36, 3 × 12, 6 × 6

18) Find the prime factorization of 72.   18) _____
    A) $1 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$ B) $8 \cdot 9$
    C) $2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$ D) $2 \cdot 3 \cdot 3 \cdot 4$

19) Which list contains both even numbers and odd numbers?   19) _____
    A) 4, 10, 12, 20, 28   B) 5, 10, 15, 20, 40
    C) 6, 30, 40, 50, 60   D) 2, 4, 6, 8, 10

20) Determine the composite number represented by $2^2(3^3)(5)$.   20) _____
    A) 180   B) 108   C) 540   D) 30

21) Which number is neither prime nor composite?   21) _____
    A) 3   B) 2   C) 1   D) 4

22) Find the prime factorization of 1,260.   22) _____
    A) $1 \cdot 4 \cdot 5 \cdot 7 \cdot 9$ B) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 35$
    C) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 \cdot 7$ D) $2 \cdot 2 \cdot 2 \cdot 3 \cdot 5 \cdot 5$

23) Write the prime factors of 360 in exponential notation.　　23) _____

A) 2×2×2×3×3×5　　　B) $2^3 \times 3^2 \times 5$　　　C) 2×2×3×3×3×5　　　D) $2^2 \times 3^3 \times 5$

24) Write the prime factorization of 1,800 using exponential notation.　　24) _____

A) 2•2•2•3•3•5•5　　　B) $2^3 \cdot 3^2 \cdot 5^2$　　　C) $2^3 \cdot 9 \cdot 5^2$　　　D) 18•100

25) Write the prime factorization of 120, using exponential notation.　　25) _____

A) 2^3 (3)(5)　　　B) 2 (2)(2)(3)(5)　　　C) 2^3 (2)(2)(5)　　　D) 2^4 (3)(5)

26) Write the prime factorization of 1,800, using exponential notation.　　26) _____

A) 2^3 $(3^2)(5^2)$　　　　　　　　B) 2^2 $(3^3)(5^2)$

C) 2 $(3^2)(10^2)$　　　　　　　　D) 2 (2)(2)(3)(3)(5)(5)

27) Which is the least common multiple of 6 and 9?　　27) _____

A) 54　　　B) 9　　　C) 18　　　D) 6

28) Which is the least common multiple of 4 and 15?　　28) _____

A) 30　　　B) 60　　　C) 4　　　D) 15

29) Find the greatest common factor of 6 and 15.　　29) _____

A) 90　　　B) 3　　　C) 15　　　D) 1

30) Find the greatest common factor of 20 and 28.　　30) _____

A) 2　　　B) 4　　　C) 1　　　D) 140

31) Find the least common multiple of 12, 24, and 30.　　31) _____

A) 6　　　B) 12　　　C) 24　　　D) 120

32) Find the greatest common factor of 6, 9, and 10.　　32) _____

A) 3　　　B) 1　　　C) 6　　　D) 90

33) Which is the least common multiple of 4 and 12?　　33) _____

A) 4　　　B) 48　　　C) 12　　　D) 2

34) Find the greatest common factor of 42, 84, and 210.　　34) _____

A) 7　　　B) 14　　　C) 42　　　D) 21

35) Which is the least common multiple of 2, 7, and 14?　　35) _____

A) 14　　　　　　　　B) 7

C) 196　　　　　　　　D) none of the above

36) Which is the least common multiple of 12, 18, and 30? 36) _____
    A) 180   B) 6   C) 6,480   D) 1,620

37) Find the greatest common factor of 14, 21, and 35. 37) _____
    A) 2   B) 210   C) 7   D) 10,290

38) Find the greatest common factor of 26 and 52. 38) _____
    A) 676   B) 26   C) 13   D) 1

39) Which of the following list of fractions is equivalent to $\frac{7}{10}$? 39) _____

    A) $\frac{14}{20}, \frac{9}{40}, \frac{35}{50}, \frac{49}{70}, \frac{70}{100}$ B) $\frac{7}{20}, \frac{7}{40}, \frac{7}{50}, \frac{7}{70}, \frac{7}{100}$

    C) $\frac{14}{10}, \frac{28}{10}, \frac{35}{10}, \frac{49}{10}, \frac{70}{10}$ D) $\frac{14}{20}, \frac{28}{40}, \frac{35}{50}, \frac{49}{70}, \frac{70}{100}$

40) Which of the following fractions is equivalent to $\frac{3}{4}$? 40) _____

    A) $\frac{15}{3}$ B) $\frac{15}{20}$ C) $\frac{15}{4}$ D) 2

41) Find the equivalent fraction having the denominator indicated in $\frac{4}{9} = \frac{?}{27}$. 41) _____

    A) $\frac{12}{27}$ B) $\frac{8}{27}$ C) $\frac{4}{27}$ D) $\frac{36}{27}$

42) Reduce $\frac{16}{20}$ to lowest terms. 42) _____

    A) $\frac{16}{20}$ B) $\frac{8}{10}$ C) $\frac{4}{5}$ D) 1

43) If each inch of an English rule is divided into 64 units, what part of an inch would be measured by 3 of the units? 43) _____

    A) $\frac{3}{64}$ inch   B) 3 inches   C) $\frac{1}{4}$ inch   D) $\frac{3}{8}$ inch

44) Reduce $\frac{24}{36}$ to lowest terms. 44) _____

    A) $\frac{4}{6}$ B) $\frac{24}{36}$ C) $\frac{12}{18}$ D) $\frac{2}{3}$

45) Simplify $\frac{48}{96}$.   45) _____

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

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

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

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

    E) none of the above

46) Write 11 ÷ 25 in fraction form.   46) _____

    A) $2\frac{3}{11}$ B) $\frac{25}{11}$ C) $2\frac{3}{25}$ D) $\frac{11}{25}$

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

47) Use a U.S. customary ruler to measure the line below to the nearest eighth   47) _____
of an inch:

48) Use a U.S. customary ruler to measure the line below to the nearest fourth   48) _____
of an inch:

49) Use a U.S. customary ruler to measure the line below to the nearest   49) _____
sixteenth of an inch:

50) Use a U.S. customary ruler to measure the line below to the nearest half   50) _____
inch:

51) Use a U.S. customary ruler to measure the line below to the nearest sixteenth of an inch:

51) _____

52) Use a U.S. customary ruler to measure the line below to the nearest fourth of an inch:

52) _____

53) Use a U.S. customary ruler to measure the line below to the nearest sixteenth of an inch:

53) _____

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

54) Write a fraction to represent the shaded portion of a given figure.

54) _____
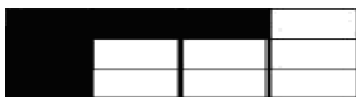
A) $\dfrac{7}{12}$ B) $\dfrac{5}{12}$ C) $\dfrac{3}{4}$ D) $\dfrac{1}{4}$

55) Write a fraction to represent 4 out of 5 kittens in a litter.

55) _____

A) $\dfrac{3}{5}$ B) $\dfrac{2}{5}$ C) $\dfrac{1}{5}$ D) $\dfrac{4}{5}$

56) Reduce $\dfrac{50}{100}$ to lowest terms.

56) _____

A) 0.5   B) $\dfrac{1}{2}$ C) $\dfrac{5}{10}$ D) $\dfrac{10}{20}$

57) Reduce $\dfrac{24}{75}$ to lowest terms.

57) _____

A) $\dfrac{6}{25}$ B) $\dfrac{8}{25}$ C) $\dfrac{3}{25}$ D) $\dfrac{24}{50}$

58) Reduce $\dfrac{72}{180}$ to lowest terms.   58) _____

   A) $\dfrac{72}{180}$ B) $\dfrac{6}{15}$ C) $\dfrac{36}{90}$ D) $\dfrac{2}{5}$

59) Which fraction is equivalent to $\dfrac{7}{8}$ and has a denominator of 56?   59) _____

   A) $\dfrac{56}{64}$ B) $\dfrac{35}{56}$ C) $\dfrac{49}{56}$ D) $\dfrac{15}{56}$

60) Which fraction is equivalent to $\dfrac{3}{5}$ and has a denominator of 30?   60) _____

   A) $\dfrac{18}{30}$ B) $\dfrac{9}{30}$ C) $\dfrac{30}{50}$ D) $\dfrac{3}{30}$

61) Which fraction is equivalent to $\dfrac{4}{7}$ and has a denominator of 28?   61) _____

   A) $\dfrac{3}{28}$ B) $\dfrac{16}{28}$ C) $\dfrac{28}{49}$ D) $\dfrac{8}{28}$

62) If each inch on a U.S. customary rule is divided into 32 parts, what part of an   62) _____
   inch would be indicated by the 5th hash mark in a inch? (Illustrate with a
   drawing.)

   A) $\dfrac{5}{64}$ inch   B) $\dfrac{5}{32}$ inch   C) $\dfrac{5}{16}$ inch   D) $\dfrac{1}{4}$ inch

63) If one inch on a U.S. customary rule is divided into 16 parts, what is the length of   63) _____
   each part of the inch?

   A) $\dfrac{1}{17}$ inch   B) 16 inches   C) $\dfrac{1}{16}$ inch   D) $\dfrac{1}{4}$ inch

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

64) Describe how you can tell if a fraction has been reduced to lowest terms.

65) What is the process used to reduce a fraction?

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

66) Write $\frac{37}{14}$ as a mixed number.

66) _____

    A) $2\frac{9}{14}$

    B) $2\frac{1}{7}$

    C) $1\frac{23}{14}$

    D) $9\frac{2}{14}$

    E) none of the above

67) Which of $\frac{5}{12}$, 2, $4\frac{2}{3}$, $\frac{11}{4}$ is an improper fraction?

67) _____

    A) 2   B) $\frac{11}{4}$ C) $\frac{5}{12}$ D) $4\frac{2}{3}$

68) Write $\frac{90}{35}$ as a mixed number.

68) _____

    A) $2\frac{4}{7}$

    B) $3\frac{2}{7}$

    C) $4\frac{2}{7}$

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

    E) none of the above

69) Convert $\frac{69}{16}$ to a mixed or whole number.

69) _____

    A) $4\frac{5}{16}$ B) $4\frac{5}{8}$ C) $4\frac{7}{16}$ D) $\frac{5}{16}$

70) Write $\frac{42}{5}$ as a whole or mixed number.

70) _____

    A) $7\frac{2}{5}$ B) $7\frac{7}{5}$ C) $8\frac{7}{5}$ D) $8\frac{2}{5}$

71) Write $\frac{13}{7}$ as a whole or mixed number.

    71) _____

    A) $1\frac{6}{13}$ B) $1\frac{6}{7}$ C) $2\frac{1}{7}$ D) $\frac{6}{7}$

72) A denominator of a fraction is 36 and the numerator is 15. Which of the following best describes the fraction?

    72) _____

    A) The fraction is best described as an improper fraction.

    B) The item represented by the fraction is divided into 36 equal parts.

    C) When written as a fraction the fraction is in lowest terms.

    D) The fraction can be written as $\frac{36}{15}$.

73) Write $\frac{15}{3}$ as a whole or mixed number in lowest terms.

    73) _____

    A) 5   B) $4\frac{3}{3}$ C) 12   D) $\frac{1}{5}$

74) Write $\frac{54}{12}$ as a whole or mixed number in lowest terms.

    74) _____

    A) $4\frac{1}{2}$ B) $5\frac{1}{2}$ C) 42   D) $4\frac{6}{12}$

75) Write $\frac{35}{10}$ as a whole or mixed number in lowest terms.

    75) _____

    A) $3\frac{1}{2}$ B) 25   C) $3\frac{5}{10}$ D) $30\frac{1}{2}$

76) Change $5\frac{2}{3}$ to an improper fraction.

    76) _____

    A) $\frac{10}{3}$ B) $\frac{2}{3}$ C) $\frac{15}{3}$ D) $\frac{17}{3}$

77) Convert $3\frac{7}{8}$ to an improper fraction.

    77) _____

    A) $\frac{21}{8}$ B) $\frac{31}{8}$ C) $\frac{29}{8}$ D) $\frac{24}{8}$

78) Change $2\frac{5}{6}$ to an improper fraction.

78) _____

    A) $\frac{17}{6}$ B) $\frac{13}{8}$ C) $\frac{12}{6}$ D) $\frac{11}{6}$

79) Change $28\frac{1}{3}$ to an improper fraction.

79) _____

    A) $\frac{31}{3}$ B) $\frac{85}{3}$ C) $\frac{32}{3}$ D) $\frac{85}{28}$

80) Change $14\frac{3}{4}$ to an improper fraction.

80) _____

    A) $\frac{49}{4}$ B) $\frac{59}{4}$ C) $\frac{21}{4}$ D) $\frac{46}{4}$

81) Change $7\frac{1}{3}$ to an improper fraction.

81) _____

    A) $3\frac{1}{7}$ B) $\frac{3}{22}$ C) $\frac{11}{3}$ D) $\frac{22}{3}$

82) Change 0.6 to its fraction or mixed-number equivalent and reduce to lowest terms.

82) _____

    A) $\frac{4}{5}$ B) $\frac{60}{100}$ C) $\frac{6}{10}$ D) $\frac{3}{5}$

83) Change 2.5 to its fractional equivalent and reduce to lowest terms.

83) _____

    A) $\frac{25}{100}$ B) $2\frac{5}{100}$ C) $2\frac{1}{2}$ D) $\frac{1}{4}$

84) The length of a screw is 2.625 in. Represent this length as a mixed number.

84) _____

    A) $2\frac{3}{8}$ in.   B) $2\frac{7}{8}$ in.   C) $2\frac{5}{8}$ in.   D) $\frac{5}{8}$ in.

85) Change $\frac{9}{10}$ to a decimal.

85) _____

    A) 9   B) 0.09   C) 0.9   D) 90

86) Change $\dfrac{7}{9}$ to a repeating decimal.

86) _____

   A) $0.777\dfrac{7}{9}$ B) 0.77777777 C) 0.77777778 D) $0.\overline{7}$

87) Change 0.024 to its fraction equivalent and reduce to lowest terms.

87) _____

   A) $\dfrac{24}{100}$ B) $\dfrac{6}{25}$ C) $\dfrac{24}{1000}$ D) $\dfrac{3}{125}$

88) The length of a screw is 4.275 in. Represent this length as a mixed number.

88) _____

   A) $3\dfrac{3}{4}$ B) $3\dfrac{5}{8}$ C) $4\dfrac{11}{40}$ D) $3\dfrac{7}{8}$

89) Which fraction represents a measure of 0.3475 ft.?

89) _____

   A) $\dfrac{3}{16}$ B) $\dfrac{3475}{100}$ C) $\dfrac{139}{400}$ D) $\dfrac{27}{80}$

90) Change $1\dfrac{7}{8}$ to a decimal.

90) _____

   A) 0.1875 B) 9.75 C) 1.875 D) 0.975

91) Write $\dfrac{7}{12}$ as a decimal to the hundredths place with remainder expressed as a

91) _____

   fraction.

   A) $.58\dfrac{12}{100}$ B) $.58\dfrac{1}{3}$ C) $.583\dfrac{1}{3}$ D) $.58\dfrac{1}{25}$

92) A plan needs a gap of $\dfrac{5}{8}$ in. What should the gap be in decimal notation?

92) _____

   A) 0.63 in.   B) 0.625 in.   C) 1.6 in.   D) 0.125 in.

93) Which fraction is smallest?

93) _____

   A) $\dfrac{5}{12}$ B) $\dfrac{3}{4}$ C) $\dfrac{2}{3}$ D) $\dfrac{1}{2}$ E) $\dfrac{6}{7}$

94) A quality control inspector used calipers to measure the diameters of four rods and found them to be 0.256 mm, 0.264 mm, 0.253 mm, and 0.249 mm. Which measure is largest?

94) _____

   A) 0.253 mm   B) 0.264 mm   C) 0.256 mm   D) 0.249 mm

95) Which is the common denominator for $\frac{3}{7}$ and $\frac{5}{8}$?

95) _____

A) 8   B) 15   C) 56   D) 7

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

96) Arrange these fractions in order beginning with the smallest: $\frac{3}{4}, \frac{3}{8}, \frac{5}{12}, \frac{6}{7}$

96) _____

97) If hot dogs come in packages of ten and buns come in packages of eight, what is the minimum number of packages of hot dogs and buns that need to be purchased so that there is an equal number of hot dogs and buns?

97) _____

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

98) Which is the common denominator for $\frac{3}{5}$ and $\frac{7}{15}$?

98) _____

A) 5   B) 20   C) 15   D) 10

99) Arrange $\frac{4}{9}, \frac{1}{3}, \frac{5}{11}$ in order, beginning with the smallest.

99) _____

A) $\frac{1}{3}, \frac{5}{11}, \frac{4}{9}$ B) $\frac{1}{3}, \frac{4}{9}, \frac{5}{11}$ C) $\frac{5}{11}, \frac{4}{9}, \frac{1}{3}$ D) $\frac{4}{9}, \frac{1}{3}, \frac{5}{11}$

100) Which fraction is larger, $\frac{7}{8}$ or $\frac{7}{9}$?

100) _____

A) $\frac{7}{9}$ B) $\frac{7}{8}$

101) Which fraction is larger, $\frac{3}{5}$ or $\frac{5}{6}$?

101) _____

A) $\frac{3}{5}$ B) $\frac{5}{6}$

102) Which of the following expressions has the greatest value?

102) _____

A) 0.87   B) $\frac{27}{32}$ C) $\frac{7}{8}$ D) $\frac{4}{5}$

103) Which is the common denominator for $\frac{1}{2}, \frac{5}{18}$, and $\frac{7}{8}$?

103) _____

A) 100   B) 2   C) 72   D) 36

12

104) Which is the common denominator for $\frac{7}{8}$, $\frac{5}{12}$, and $\frac{5}{6}$?   104) _____

    A) 36   B) 12   C) 16   D) 24

105) Which pair of fractions has the common denominator 48?   105) _____

    A) $\frac{3}{14}$ and $\frac{5}{12}$ B) $\frac{7}{36}$ and $\frac{5}{6}$ C) $\frac{5}{8}$ and $\frac{1}{5}$ D) $\frac{1}{6}$ and $\frac{7}{16}$

106) A wrench is marked $\frac{11}{16}$ at one end and $\frac{15}{32}$ at the other end. Which end is larger?   106) _____

    A) $\frac{15}{32}$ B) $\frac{11}{16}$

107) Which decimal is larger, 4.35 or 4.336?   107) _____

    A) 4.35   B) 4.336

108) A nurse measures and records temperatures of 96.9, 98.5, 95.7, and 97.9. Which   108) _____
temperature is highest?

    A) 98.5   B) 95.7   C) 97.9   D) 96.9

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

109) Which board is longer? One that is seventy-two and four fifths inches or one that is
seventy-two and seven eighths inches? Explain how you know.

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

110) Add: $3\frac{1}{2} + \frac{4}{5}$ 110) _____

    A) $4\frac{7}{10}$

    B) $3\frac{5}{8}$

    C) $3\frac{1}{2}$

    D) $4\frac{3}{10}$

    E) none of the above

111) What length of bolt is needed to fasten two pieces of metal each $\frac{3}{4}$ in. thick if a   111) _____

$\frac{3}{16}$ in. lock washer is used and a $\frac{1}{8}$ in. nut is used?

    A) $1\frac{13}{16}$ in.   B) $1\frac{11}{16}$ in.   C) $1\frac{1}{16}$ in.   D) $\frac{13}{16}$ in.

112) The studs of an outside wall are $5\frac{1}{2}$ in. thick. The inside wallboard is $\frac{5}{8}$ in. thick   112) _____

and the outside covering is $2\frac{15}{16}$ in. thick. What is the total thickness of the wall?

    A) $9\frac{3}{16}$ in.   B) $9\frac{1}{16}$ in.   C) $8\frac{15}{16}$ in.   D) $8\frac{1}{16}$ in.

113) Perform the indicated operation, leaving the answer in lowest terms: $\frac{1}{7} + \frac{2}{3} =$ 113) _____

    A) $\frac{3}{10}$ B) $\frac{17}{21}$ C) $\frac{12}{21}$ D) $\frac{2}{21}$

114) Add: $\frac{5}{9} + \frac{7}{30}$ 114) _____

    A) $\frac{17}{45}$

    B) $\frac{12}{39}$

    C) $\frac{71}{90}$

    D) $\frac{23}{45}$

    E) none of the above

115) Perform the indicated operation, leaving the answer in lowest terms: $2\frac{3}{4} + 1\frac{1}{5} =$ 115) _____

    A) $2\frac{7}{24}$ B) $1\frac{11}{20}$ C) $3\frac{19}{20}$ D) $3\frac{3}{10}$

116) Add: $2\dfrac{11}{14} + \dfrac{9}{35}$ 116) _____

   A) $1\dfrac{3}{10}$

   B) $\dfrac{20}{49}$

   C) $3\dfrac{3}{70}$

   D) $\dfrac{2}{7}$

   E) none of the above

117) Add $\dfrac{7}{8} + \dfrac{5}{8}$ and reduce answers to lowest terms with improper fractions changed   117) _____

to whole or mixed numbers.

   A) $\dfrac{3}{8}$ B) $1\dfrac{1}{2}$ C) $1\dfrac{3}{4}$ D) $\dfrac{3}{4}$

118) Add $\dfrac{7}{16} + \dfrac{3}{4}$ and reduce answers to lowest terms with improper fractions   118) _____

changed to whole or mixed numbers.

   A) $\dfrac{1}{2}$ B) $1\dfrac{1}{4}$ C) $\dfrac{5}{8}$ D) $1\dfrac{3}{16}$

119) Add $2\dfrac{7}{8} + 1\dfrac{1}{4}$ and reduce answers to lowest terms with improper fractions   119) _____

changed to whole or mixed numbers.

   A) $5\dfrac{1}{8}$ B) $4\dfrac{1}{8}$ C) $3\dfrac{2}{3}$ D) $3\dfrac{1}{8}$

120) Joe added the following quarts of oil: $1\dfrac{1}{2}$ qt. $2\dfrac{1}{4}$ qt. and $3\dfrac{1}{2}$ qt. How much oil   120) _____

did Joe add?

   A) $7\dfrac{1}{2}$ qt.   B) $7\dfrac{1}{4}$ qt.   C) 7 qt.   D) $7\dfrac{3}{4}$ qt.

121) Add $6\frac{5}{8} + 6\frac{3}{5}$ and reduce answers to lowest terms with improper fractions   121) _____
changed to whole or mixed numbers.

    A) $12\frac{8}{13}$ B) $12\frac{9}{40}$ C) $13\frac{9}{40}$ D) $13\frac{8}{13}$

122) A plumber uses a $\frac{3}{4}$ inch diameter copper tube wrapped with $\frac{11}{32}$ inch insulation.   122) _____
What size hole must be bored for the insulated pipe to pass through?

    A) $1\frac{3}{32}$

    B) $1\frac{5}{16}$

    C) $1\frac{7}{16}$

    D) $1\frac{15}{32}$

    E) none of the above

123) Perform the indicated operation, leaving the answer in lowest terms: $\frac{5}{8} + \frac{11}{16} =$ 123) _____

    A) $1\frac{4}{5}$ B) $1\frac{5}{16}$ C) $\frac{2}{3}$ D) $\frac{55}{128}$

124) Perform the indicated operation, leaving the answer in lowest terms: $\frac{7}{9} + 4\frac{5}{6} + 4$ 124) _____
=

    A) $15\frac{1}{27}$ B) $8\frac{4}{5}$ C) $9\frac{11}{18}$ D) $2\frac{2}{3}$

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

125) A plumber uses a $\frac{3}{8}$ inch pipe with $\frac{9}{32}$ inch insulation. What size hole   125) _____
must be bored for the insulated pipe to pass through?

126) Find the mistake in the following problem: $\frac{3}{4} + \frac{5}{6} = \frac{8}{10} = \frac{4}{5}$ 126) _____

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

127) Add $\frac{11}{12} + \frac{7}{8}$ and reduce answers to lowest terms with improper fractions changed to whole or mixed numbers.

    A) $1\frac{9}{10}$ B) $\frac{9}{10}$ C) $\frac{19}{24}$ D) $1\frac{19}{24}$

127) _____

128) Add $10 + 4\frac{4}{5}$ and reduce answers to lowest terms with improper fractions changed to whole or mixed numbers.

    A) $18\frac{4}{5}$ B) $5\frac{1}{5}$ C) $6\frac{4}{5}$ D) $14\frac{4}{5}$

128) _____

129) A blueprint calls for a piece of bar stock $7\frac{5}{8}$ in. long. If a tolerance of $\pm\frac{1}{16}$ in. is allowed, what is the longest permissible measurement for the bar stock?

    A) $7\frac{9}{16}$ B) $7\frac{1}{4}$ C) $7\frac{3}{8}$ D) $7\frac{11}{16}$

129) _____

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

130) Why is a least common denominator so important in adding fractions?

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

131) Subtract: $\frac{5}{12} - \frac{7}{30}$

    A) $\frac{7}{30}$

    B) $\frac{7}{60}$

    C) $\frac{11}{30}$

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

    E) none of the above

131) _____

132) Ted has a wall anchor that measures $1\frac{5}{16}$ inches. The screw he wishes to use is   132) _____

   $1\frac{1}{4}$ inches. By how much is the anchor longer or shorter than the screw?

   A) $\frac{1}{4}$ in.   B) $\frac{1}{16}$ in.   C) $\frac{1}{8}$ in.   D) 1 in.

133) A fence board is 96 inches long. $2\frac{3}{4}$ inches is cut off. The saw blade takes off an   133) _____

   additional $\frac{1}{8}$ inches. How long is the finished board?

   A) $93\frac{1}{4}$ inches   B) $93\frac{1}{8}$ inches   C) $94\frac{1}{8}$ inches   D) $94\frac{1}{4}$ inches

134) Subtract: $9\frac{3}{8} - 3\frac{7}{12}$ 134) _____

   A) $5\frac{23}{24}$

   B) $5\frac{19}{24}$

   C) $5\frac{7}{12}$

   D) $6\frac{5}{12}$

   E) none of the above

135) Perform the indicated operation, leaving the answer in lowest terms: $6\frac{1}{6} - 2\frac{5}{12} =$ 135) _____

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

136) Perform the indicated operation, leaving the answer in lowest terms: $\frac{2}{3} - \frac{1}{7} =$ 136) _____

   A) $\frac{1}{4}$ B) $\frac{3}{10}$ C) $\frac{11}{21}$ D) $-\frac{1}{4}$

137) Six rods $3\frac{1}{16}$ inches long were cut from a piece of iron rod 41 inches long.   137) _____

Allow $\frac{1}{8}$ inch waste for each cut. What was the length of the piece left?

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

138) Subtract: $\frac{5}{12} - \frac{7}{18}$ 138) _____

A) $\frac{7}{36}$

B) $\frac{1}{36}$

C) $\frac{13}{24}$

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

E) none of the above

139) Mary cut $4\frac{3}{4}$ sq. yd. of cloth from $5\frac{1}{2}$ sq. yd. of cloth. How many sq. yd. of cloth   139) _____

remain?

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

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

140) How long of a bolt is needed to fasten two pieces of metal each $\frac{11}{16}$ inches   140) _____

thick if a $\frac{7}{64}$ inch thick nut is used? The nut must be flush with the bolt

after tightening.

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

141) Subtract and reduce when necessary: $\frac{5}{16} - \frac{3}{16}$ 141) _____

A) $\frac{1}{2}$ B) $\frac{2}{0}$ C) $\frac{1}{8}$ D) $\frac{1}{16}$

142) Subtract and reduce when necessary: $\dfrac{11}{16} - \dfrac{5}{8}$ 142) _____

    A) $\dfrac{3}{8}$ B) $\dfrac{3}{4}$ C) $\dfrac{1}{8}$ D) $\dfrac{1}{16}$

143) Subtract and reduce when necessary: $6\dfrac{7}{8} - 5$ 143) _____

    A) $1\dfrac{7}{8}$ B) $1\dfrac{1}{8}$ C) 1 D) $4\dfrac{1}{8}$

144) Subtract and reduce when necessary: $3\dfrac{7}{9} - 1\dfrac{5}{9}$ 144) _____

    A) $2\dfrac{2}{9}$ B) $2\dfrac{1}{9}$ C) $3\dfrac{2}{9}$ D) $2\dfrac{2}{0}$

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

145) A machine part is fabricated to be $3\dfrac{5}{8}$ inch long with a tolerance of $\pm$ 145) _____

$\dfrac{1}{32}$ inch. What is the smallest and largest the part can be?

146) A machine part is fabricated to be $8\dfrac{1}{4}$ inch long with a tolerance of $\pm$ 146) _____

$\dfrac{1}{32}$ inch. What is the smallest and largest the part can be?

147) Find the mistake in the following problem: 147) _____

    $2\dfrac{1}{2} - 1\dfrac{2}{3} = 2\dfrac{3}{6} - 1\dfrac{4}{6} = 1\dfrac{1}{6}$

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

148) Perform the indicated operation in the expression $2\dfrac{3}{4} - 1\dfrac{1}{5} =$ 148) _____

    A) $1\dfrac{11}{20}$ B) $2\dfrac{7}{24}$ C) $3\dfrac{3}{10}$ D) $3\dfrac{19}{20}$

149) Subtract and reduce when necessary: $\dfrac{9}{12} - \dfrac{2}{3}$ 149) _____

    A) $\dfrac{1}{12}$ B) $\dfrac{7}{9}$ C) $\dfrac{11}{15}$ D) $\dfrac{7}{12}$

150) Subtract and reduce when necessary: $\dfrac{7}{8} - \dfrac{9}{12}$ 150) _____

    A) $\dfrac{1}{6}$ B) $\dfrac{1}{2}$ C) $\dfrac{1}{8}$ D) $\dfrac{1}{12}$

151) Subtract and reduce when necessary: $\dfrac{7}{8} - \dfrac{2}{3}$ 151) _____

    A) $\dfrac{5}{24}$ B) 1 C) $\dfrac{5}{12}$ D) $\dfrac{1}{24}$

152) Subtract and reduce when necessary: $12\dfrac{9}{32} - 3\dfrac{15}{32}$ 152) _____

    A) $8\dfrac{13}{16}$ B) $9\dfrac{-3}{16}$ C) $9\dfrac{13}{16}$ D) $9\dfrac{3}{16}$

153) Subtract and reduce when necessary: $31\dfrac{7}{8} - 20\dfrac{15}{16}$ 153) _____

    A) $11\dfrac{1}{2}$ B) $10\dfrac{7}{8}$ C) $11\dfrac{1}{16}$ D) $10\dfrac{15}{16}$

154) A concrete foundation includes $10\dfrac{1}{3}$ inches fill. If the foundation is to be 32   154) _____

inches thick, how thick must the concrete layer be?

    A) $21\dfrac{2}{3}$ in.   B) $22\dfrac{2}{3}$ in.   C) $22\dfrac{1}{3}$ in.   D) $21\dfrac{1}{3}$ in.

155) Multiply: $\dfrac{5}{9} \times \dfrac{3}{10} \times \dfrac{3}{4}$

155) _____

    A) $\dfrac{5}{8}$

    B) $\dfrac{1}{8}$

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

    D) $\dfrac{11}{12}$

    E) none of the above

156) Perform the indicated operation, leaving the answer in lowest terms: $2\dfrac{3}{4} \times 1\dfrac{1}{5} =$

156) _____

    A) $3\dfrac{3}{10}$ B) $3\dfrac{19}{20}$ C) $2\dfrac{7}{24}$ D) $1\dfrac{11}{20}$

157) If you multiply a proper fraction by a proper fraction, the result is a number that is

157) _____

    A) equal in size to the largest factor.

    B) smaller than the larger factor only.

    C) larger than either of the factors.

    D) smaller than either of the factors.

158) Multiply: $\dfrac{8}{9} \times \dfrac{3}{4} \times \dfrac{3}{10}$

158) _____

    A) $\dfrac{10}{27}$

    B) $\dfrac{3}{8}$

    C) $\dfrac{3}{10}$

    D) $\dfrac{1}{5}$

    E) none of the above

159) Perform the indicated operation, leaving the answer in lowest terms: $\dfrac{2}{3} \times \dfrac{1}{7} =$ 159) _____

A) $\dfrac{17}{21}$

B) $\dfrac{14}{23}$

C) $\dfrac{2}{21}$

D) $\dfrac{11}{21}$

160) Perform the indicated operation, leaving the answer in lowest terms: $2\dfrac{5}{7} \times 4\dfrac{2}{3} =$ 160) _____

A) $8\dfrac{1}{3}$

B) $8\dfrac{10}{21}$

C) $7\dfrac{8}{21}$

D) $12\dfrac{2}{3}$

161) Perform the indicated operation, leaving the answer in lowest terms: $3\dfrac{1}{12} \times \dfrac{4}{9} =$ 161) _____

A) $\dfrac{1}{9}$

B) $3\dfrac{1}{27}$

C) $1\dfrac{10}{27}$

D) $2\dfrac{20}{21}$

162) Perform the indicated operation, leaving the answer in lowest terms: $7 \times \dfrac{5}{6} =$ 162) _____

A) 2

B) $5\dfrac{5}{6}$

C) $\dfrac{5}{42}$

D) $\dfrac{70}{12}$

163) Multiply: $1\dfrac{2}{3} \times 3\dfrac{1}{5}$ 163) _____

A) $3\dfrac{11}{15}$

B) $4\dfrac{1}{2}$

C) $3\dfrac{14}{15}$

D) $5\dfrac{1}{3}$

E) none of the above

164) Multiply and reduce answers to lowest terms: $\dfrac{1}{4} \times \dfrac{7}{16}$ 164) _____

A) $\dfrac{7}{4}$

B) $\dfrac{7}{8}$

C) $\dfrac{7}{64}$

D) $\dfrac{7}{16}$

165) Multiply and reduce answers to lowest terms: $\dfrac{7}{8} \times \dfrac{15}{32}$

165) _____

    A) $\dfrac{105}{32}$ B) $\dfrac{105}{256}$ C) $\dfrac{105}{4}$ D) $\dfrac{11}{16}$

166) Multiply, reduce answers to lowest terms and convert improper fractions to whole or mixed numbers: $9 \times 3\dfrac{4}{5}$

166) _____

    A) $27\dfrac{4}{5}$ B) $34\dfrac{1}{5}$ C) $34\dfrac{36}{45}$ D) $27\dfrac{36}{5}$

167) Multiply, reduce answers to lowest terms and convert improper fractions to whole or mixed numbers: $5\dfrac{3}{8} \times 3\dfrac{5}{6}$

167) _____

    A) $15\dfrac{5}{16}$ B) $15\dfrac{7}{24}$ C) $20\dfrac{29}{24}$ D) $20\dfrac{29}{48}$

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

168) Standard typing paper is $8\dfrac{1}{2}$ inches wide by 11 inches long. If the margin all around the edge of the paper is a uniform one inch, what is the area of the paper that can be printed on? (Note: Area = Length × Width)

168) _____

169) A plumber needs 6 pieces of pipe each $16\dfrac{5}{8}$ inches long. If $\dfrac{1}{8}$ inch waste is allowed for each cut, what length pipe must the plumber have?

169) _____

170) A metal bar is cut into six pieces each $3\dfrac{3}{8}$ inches long. Each cut wastes $\dfrac{1}{16}$ inch. Determine the length of the original bar.

170) _____

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

171) The staircase in a house has 15 risers, each one $7\dfrac{5}{8}$ inches high. What is the total rise of the steps?

171) _____

    A) $119\dfrac{3}{8}$ inches   B) $105\dfrac{5}{8}$ inches   C) $10\dfrac{5}{8}$ inches   D) $114\dfrac{3}{8}$ inches

172) Multiple and reduce answers to lowest terms: $\dfrac{7}{8}\left(\dfrac{3}{14}\right)$

172) _____

    A) $\dfrac{3}{16}$ B) $\dfrac{3}{8}$ C) $\dfrac{3}{4}$ D) $\dfrac{21}{112}$

173) A fuel tank that holds 90 liters (L) of fuel is $\dfrac{2}{3}$ full. How many liters of fuel are in the tank?

173) _____

    A) 60 L   B) 135 L

    C) $90\dfrac{2}{3}$ L   D) none of the above

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

174) An alloy weighing 42 pounds is $\dfrac{2}{5}$ copper, $\dfrac{1}{5}$ silver, and $\dfrac{2}{5}$ other material. How many pounds of silver are in the alloy? Explain the process you used to find the answer.

175) A mixture of dirt, sand, etc. that weighs 350 pounds is 3 parts dirt, 1 part sand, 2 parts top soil, and 2 parts peat. How many pounds of dirt are in the mixture? Explain the process you used to find the answer.

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

176) Raise to the indicated power: $\left(\dfrac{2}{3}\right)^2$

176) _____

177) Raise to the indicated power: $\left(\dfrac{3}{8}\right)^2$

177) _____

178) Raise to the indicated power: $\left(\dfrac{1}{4}\right)^3$

178) _____

179) Raise to the indicated power: $\left(\dfrac{2}{5}\right)^3$

179) _____

180) Raise to the indicated power: $\left(1\dfrac{1}{3}\right)^2$

180) _____

181) Raise to the indicated power: $\left(2\frac{1}{5}\right)^2$

181) _____

182) Raise to the indicated power: $\left(\frac{4}{9}\right)^2$

182) _____

A) $\frac{8}{9}$

B) $\frac{8}{18}$

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

D) $\frac{16}{81}$

183) Perform the indicated operation, leaving the answer in lowest terms: $\left(\frac{3}{5}\right)^2 =$

183) _____

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

B) $\frac{6}{25}$

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

D) $\frac{9}{5}$

184) Perform the indicated operation, leaving the answer in lowest terms: $\left(\frac{5}{7}\right)^2 =$

184) _____

A) $\frac{5}{7}$

B) $\frac{25}{14}$

C) $\frac{25}{49}$

D) $\frac{10}{49}$

185) Raise to the indicated power: $\left(\frac{3}{5}\right)^2$

185) _____

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

B) $\frac{6}{10}$

C) $\frac{6}{25}$

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

186) Raise to the indicated power: $\left(\frac{2}{3}\right)^3$

186) _____

A) $\frac{6}{27}$

B) $\frac{6}{9}$

C) $\frac{8}{27}$

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

187) Raise to the indicated power: $\left(\frac{2}{5}\right)^3$

187) _____

A) $\frac{6}{125}$

B) $\frac{8}{125}$

C) $\frac{9}{15}$

D) $\frac{6}{15}$

188) Raise to the indicated power: $\left(1\frac{1}{2}\right)^2$

188) _____

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

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

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

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

189) Divide: $\dfrac{8}{7} \div \dfrac{10}{6}$

189) _____

    A) $\dfrac{15}{24}$

    B) $\dfrac{5}{12}$

    C) $\dfrac{24}{35}$

    D) $\dfrac{5}{6}$

    E) none of the above

190) Divide: $1\dfrac{3}{4} \div 2\dfrac{1}{8}$

190) _____

    A) $\dfrac{15}{13}$

    B) $\dfrac{17}{14}$

    C) $\dfrac{14}{17}$

    D) $\dfrac{13}{15}$

    E) none of the above

191) Perform the indicated operation, leaving the answer in lowest terms: $2\dfrac{2}{3} \div \dfrac{1}{2} =$

191) _____

    A) $\dfrac{4}{3}$ B) $\dfrac{16}{3}$ C) $\dfrac{3}{4}$ D) $\dfrac{3}{16}$

192) Perform the indicated operation, leaving the answer in lowest terms: $\dfrac{5\dfrac{2}{3}}{1\dfrac{1}{9}} =$

192) _____

    A) $5\dfrac{1}{10}$ B) $\dfrac{10}{51}$ C) $5\dfrac{2}{27}$ D) $\dfrac{5}{6}$

193) If you divide a large fraction by another smaller fraction, the result is a number that is:

    A) halfway between the two fractions.

    B) larger than either of the fractions.

    C) smaller than either of the fractions.

    D) equal to only one of the fractions.

193) _____

194) You have a board that is 42 inches wide and would like to position 6 smaller boards each 5 inches wide across the big board so that there is no "margin" on either side, but they are equally spaced across the board. How much space should be allowed between each of the small boards?

    A) $2\dfrac{2}{5}$ inches   B) 2 inches   C) 3 inches   D) 7 inches

194) _____

195) What is the reciprocal of 4.3?

    A) $\dfrac{4}{3}$ B) $\dfrac{34}{10}$ C) $\dfrac{10}{43}$ D) $\dfrac{3}{4}$

195) _____

196) Perform the indicated operation, leaving the answer in lowest terms: $\dfrac{2}{3} \div \dfrac{1}{7} =$

    A) $4\dfrac{2}{3}$ B) $\dfrac{11}{21}$ C) $\dfrac{17}{21}$ D) $\dfrac{2}{21}$

196) _____

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

197) Perform the indicated operations and reduce: $\dfrac{4\frac{9}{16} - 3\frac{1}{8}}{2\frac{1}{4} + 1\frac{3}{16}} =$

197) _____

28

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

198) Divide: $2\dfrac{7}{10} \div 3\dfrac{2}{5}$

A) $\dfrac{15}{17}$

B) $\dfrac{13}{15}$

C) $\dfrac{27}{34}$

D) $\dfrac{37}{50}$

E) none of the above

198) _____

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

199) Perform the indicated operations and reduce: $\dfrac{5\frac{1}{4} - 3\frac{1}{2}}{4\frac{1}{4} - 2\frac{1}{2}} =$

199) _____

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

200) Divide: $\dfrac{8}{9} \div \dfrac{4}{3}$

A) $\dfrac{5}{8}$

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

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

D) $\dfrac{1}{3}$

E) none of the above

200) _____

201) Which description best describes $\dfrac{\frac{5}{12}}{\frac{7}{11}}$?

A) Mixed-decimal fraction

B) Proper fraction

C) Decimal fraction

D) Complex fraction

201) _____

29

202) Give the reciprocal of $\frac{7}{9}$.

202) _____

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

203) Give the reciprocal of 9.

203) _____

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

204) Divide and reduce answers to lowest terms, converting improper fractions to whole or mixed numbers:

204) _____

$$\frac{6}{7} \div \frac{10}{21}$$

    A) $2\frac{9}{20}$ B) $1\frac{4}{5}$ C) $\frac{20}{49}$ D) $\frac{5}{9}$

205) Divide and reduce answer to lowest terms converting improper fractions to whole or mixed numbers:

205) _____

$$6 \div 3\frac{1}{3}$$

    A) $\frac{1}{20}$ B) 20   C) $1\frac{4}{5}$ D) $\frac{5}{9}$

206) Divide and reduce answer to lowest terms. Convert improper fractions to whole or mixed numbers:

206) _____

$$6 \div \frac{2}{3}$$

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

207) Divide and reduce answer to lowest terms. Convert improper fractions to whole or mixed numbers:

207) _____

$$4 \div \frac{5}{6}$$

    A) $3\frac{1}{3}$ B) $4\frac{4}{5}$ C) $\frac{5}{24}$ D) 5

208) Divide and reduce answer to lowest terms. Convert improper fraction to whole or mixed number:

$$\dfrac{\dfrac{3}{8}}{\dfrac{5}{7}}$$

A) $\dfrac{10}{49}$ B) $\dfrac{2}{5}$ C) $4\dfrac{9}{10}$ D) $\dfrac{21}{40}$

208) _____

209) Divide and reduce answer to lowest terms. Convert improper fractions to whole or mixed number:

$$\dfrac{\dfrac{3}{8}}{6}$$

A) $\dfrac{1}{16}$ B) 16   C) 4   D) $\dfrac{1}{4}$

209) _____

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

210) Five boards $3\dfrac{3}{4}$ inches long are cut from a piece of board that is 41 inches long. Allow $\dfrac{1}{8}$ inch waste for each cut. What was the length of the piece left?

210) _____

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

211) Each shelf in a floor-to-ceiling bookshelf needs a strip of molding $32\dfrac{3}{16}$ inches cut from a length of molding measuring $225\dfrac{5}{16}$ inches long. If the length of the shelf includes the saw cut, how many shelves are in this bookshelf?

A) 9   B) 6   C) 7   D) 8

211) _____

212) An I-beam measures 14 ft long. How many whole $2\dfrac{1}{16}$ ft pieces can be cut from this length?

A) 8   B) 6   C) 7   D) 5

212) _____

213) Give the reciprocal of $5\frac{3}{5}$. 213) _____

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

214) Give the reciprocal of $\frac{1}{8}$. 214) _____

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

215) Give the reciprocal of $5\frac{3}{4}$. 215) _____

   A) $\frac{23}{4}$ B) $\frac{23}{-4}$ C) $\frac{-4}{23}$ D) $\frac{4}{23}$

216) Divide and reduce answer to lowest terms, converting improper fractions to 216) _____
   whole or mixed numbers: $\frac{1}{6} \div \frac{1}{2}$

   A) $\frac{1}{12}$ B) $\frac{1}{3}$ C) 12 D) 3

217) Three-fourths of a mile is divided into $\frac{3}{8}$ mile segments. How many sections are 217) _____

   in the $\frac{3}{4}$ mile?

   A) 2 segments B) 6 segments

   C) $3\frac{5}{9}$ segments D) $\frac{1}{2}$ segment

218) How many $2\frac{1}{4}$ foot lengths can be cut from a board 18 feet long? 218) _____

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

32

219) How many pieces of fabric that are each $1\frac{2}{3}$ yards can be cut from a bolt that has   219) _____

10 yards of fabric?

    A) 4 pieces   B) $16\frac{2}{3}$ pieces   C) 6 pieces   D) 5 pieces

220) A stack of books measures $22\frac{1}{2}$ inches high and each book is $\frac{5}{8}$ inch thick. How   220) _____

many books are in the stack?

    A) 36 books   B) 14 books   C) 13 books   D) 22 books

221) Use a calculator to divide and reduce answers to lowest terms, converting   221) _____

improper fractions to whole or mixed numbers: $\dfrac{12\frac{1}{2}}{100}$

    A) $\frac{1}{8}$ B) $\frac{3}{25}$ C) $\frac{3}{40}$ D) $\frac{1}{2}$

222) Use a calculator to perform the calculations: 222) _____

$$\frac{3\frac{3}{4} + 1\frac{1}{2}}{5 - \frac{4}{5}}$$

    A) $1\frac{1}{84}$ B) $1\frac{1}{4}$

    C) $3\frac{4}{5}$ D) none of the above

223) Use a calculator to perform the calculations: 223) _____

$$\frac{3\frac{5}{8} + 1\frac{3}{4}}{7\frac{2}{3} - 1\frac{5}{6}}$$

    A) $\frac{3}{5}$ B) $\frac{129}{140}$ C) $\frac{87}{184}$ D) $\frac{129}{148}$

224) Perform the indicated operation, leaving the answer in lowest terms: $\dfrac{4}{5} - \left(\dfrac{2}{3}\right)^2 =$ 224) _____

A) $\dfrac{44}{225}$

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

C) $\dfrac{2}{15}$

D) $\dfrac{16}{45}$

225) Three books measuring $1\dfrac{1}{2}$, $\dfrac{11}{15}$, and $\dfrac{5}{6}$ are placed into one stack and shrink   225) _____

wrapped. Use a calculator to find the total thickness of the packaged stack.

A) $1\dfrac{17}{23}$

B) $2\dfrac{1}{15}$

C) $3\dfrac{1}{15}$

D) $1\dfrac{13}{30}$

226) Use a calculator to add $6\dfrac{3}{4} + 2\dfrac{1}{3} + \dfrac{7}{12}$. Write answer in lowest terms with   226) _____

improper fractions changed to whole or mixed numbers.

A) $8\dfrac{11}{19}$

B) $9\dfrac{2}{3}$

C) $9\dfrac{2}{9}$

D) $8\dfrac{11}{12}$

227) Use a calculator to multiply and reduce answers to lowest terms: $\dfrac{9}{12}\left(\dfrac{7}{16}\right)\left(\dfrac{2}{9}\right)$ 227) _____

A) 126

B) $\dfrac{7}{96}$

C) $\dfrac{7}{48}$

D) $\dfrac{126}{1,728}$

228) Use a calculator to multiply and reduce answers to lowest terms: $\dfrac{3}{5}\left(\dfrac{9}{16}\right)\left(\dfrac{8}{21}\right)$ 228) _____

A) $\dfrac{1}{84}$

B) $5\dfrac{1}{7}$

C) $\dfrac{216}{1,680}$

D) $\dfrac{9}{70}$

229) Use a calculator to multiply, reduce answer to lowest terms and convert   229) _____

improper fractions to whole or mixed numbers: $\dfrac{2}{5}\left(7\dfrac{5}{8}\right)$

A) $7\dfrac{1}{4}$

B) $3\dfrac{1}{20}$

C) $3\dfrac{17}{40}$

D) $7\dfrac{41}{40}$

230) Use a calculator to multiply, reduce answer to lowest terms and convert   230) _____

improper fractions to whole or mixed numbers: $5\dfrac{3}{4}\left(7\dfrac{2}{3}\right)$

A) $35\dfrac{1}{2}$

B) $44\dfrac{1}{12}$

C) $36\dfrac{1}{2}$

D) $43\dfrac{7}{12}$

231) Use a calculator to divide and reduce answer to lowest terms, converting improper fractions to whole or mixed numbers: $\dfrac{7}{8} \div \dfrac{5}{32}$

231) _____

A) $5\dfrac{3}{5}$　　　　B) $\dfrac{35}{265}$　　　　C) $7\dfrac{11}{35}$　　　　D) $8\dfrac{3}{4}$

232) Use a calculator to divide and reduce answer to lowest terms, converting improper fraction to whole or mixed number: $\dfrac{6}{2\frac{1}{2}}$

232) _____

A) $1\dfrac{1}{2}$　　　　B) $\dfrac{2}{3}$　　　　C) $2\dfrac{2}{5}$　　　　D) 15

233) Use a calculator with a fraction key to perform the indication operation: $12\dfrac{5}{8}\left(7\dfrac{1}{6}\right)$

233) _____

A) $90\dfrac{23}{48}$　　　　B) $84\dfrac{5}{24}$　　　　C) $90\dfrac{23}{24}$　　　　D) $84\dfrac{5}{48}$

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

49) $3\frac{5}{16}$ in.

50) $\frac{1}{2}$ in.

51) $1\frac{3}{16}$ in.

52) $3\frac{3}{4}$ in.

53) $1\frac{7}{16}$ in.

54) B
55) D
56) B
57) B
58) D
59) C
60) A
61) B
62) B
63) C
64) Answers will vary.
65) Answers will vary.
66) A
67) B
68) A
69) A
70) D
71) B
72) B
73) A
74) A
75) A
76) D
77) B
78) A
79) B
80) B
81) D
82) D
83) C
84) C
85) C
86) D
87) D
88) C
89) C

90) C
91) B
92) B
93) A
94) B
95) C
96) $\dfrac{3}{8}, \dfrac{5}{12}, \dfrac{3}{4}, \dfrac{6}{7}$
97) 4 pkgs hotdogs, 5 pkgs buns
98) C
99) B
100) B
101) B
102) C
103) C
104) D
105) D
106) B
107) A
108) A
109) Answers will vary.
110) D
111) A
112) B
113) B
114) C
115) C
116) C
117) B
118) D
119) B
120) B
121) C
122) C
123) B
124) C
125) $\dfrac{15}{16}$ in.
126) To add, you need a common denominator.

$\dfrac{3}{4} + \dfrac{5}{6} = \dfrac{9}{12} + \dfrac{10}{12} = \dfrac{19}{12}$ or $1\dfrac{7}{12}$

127) D
128) D
129) D
130) Answers will vary.
131) D
132) B

133) B
134) B
135) D
136) C

137) $21\dfrac{7}{8}$

138) B
139) A

140) $1\dfrac{31}{64}$

141) C
142) D
143) A
144) A

145) Smallest: $3\dfrac{19}{32}$, Largest: $3\dfrac{21}{32}$

146) Smallest: $8\dfrac{7}{32}$, Largest: $8\dfrac{9}{32}$

147) Borrowing is required.

$$2\dfrac{1}{2} - 1\dfrac{2}{3} = 2\dfrac{3}{6} - 1\dfrac{4}{6} = 1\dfrac{9}{6} - 1\dfrac{4}{6} = \dfrac{5}{6}$$

148) A
149) A
150) C
151) A
152) A
153) D
154) A
155) B
156) A
157) D
158) D
159) C
160) D
161) C
162) B
163) D
164) C
165) B
166) B
167) D

168) $58\dfrac{1}{2}$ in2

169) $100\dfrac{3}{8}$ in.

170) $20\dfrac{9}{16}$ in.

171) D

172) A

173) A

174) Answers will vary.

175) Answers will vary.

176) $\dfrac{4}{9}$

177) $\dfrac{9}{64}$

178) $\dfrac{1}{64}$

179) $\dfrac{8}{125}$

180) $1\dfrac{7}{9}$

181) $4\dfrac{21}{25}$

182) D

183) A

184) C

185) D

186) C

187) B

188) C

189) C

190) C

191) B

192) A

193) B

194) A

195) C

196) A

197) $\dfrac{23}{55}$

198) C

199) 1

200) C

201) D

202) D

203) B

204) B

205) C

206) B
207) B
208) D
209) A
210) $21\dfrac{5}{8}$ in. left

211) C
212) B
213) D
214) D
215) D
216) B
217) A
218) B
219) C
220) A
221) A
222) B
223) B
224) D
225) C
226) B
227) B
228) D
229) B
230) B
231) A
232) C
233) A