

**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  $3 \times 5$ .  
 B) it has 1 as a factor.  
 C) its factor pairs are  $1 \times 15, 3 \times 5$ .  
 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 largest. 17) \_\_\_\_\_  
 A)  $1 \times 36, 6 \times 6; 1, 6, 36$   
 B)  $1 \times 36; 1, 2, 3, 4, 6, 9, 12, 18, 36$   
 C)  $1 \times 36, 2 \times 18, 3 \times 12, 4 \times 9, 6 \times 6; 1, 2, 3, 4, 6, 9, 12, 18, 36$   
 D)  $1 \times 36, 3 \times 12, 6 \times 6$
- 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)  $2 \times 2 \times 2 \times 3 \times 3 \times 5$     B)  $2^3 \times 3^2 \times 5$     C)  $2 \times 2 \times 3 \times 3 \times 3 \times 5$     D)  $2^2 \times 3^3 \times 5$
- 24) Write the prime factorization of 1,800 using exponential notation. 24) \_\_\_\_\_  
 A)  $2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 \cdot 5$     B)  $2^3 \cdot 3^2 \cdot 5^2$     C)  $2^3 \cdot 9 \cdot 5^2$     D)  $18 \cdot 100$
- 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  $11 \div 25$  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 of an inch: 47) \_\_\_\_\_

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

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

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

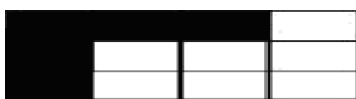
51) Use a U.S. customary ruler to measure the line below to the nearest sixteenth of an inch: 51) \_\_\_\_\_

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)  $\frac{7}{12}$       B)  $\frac{5}{12}$       C)  $\frac{3}{4}$       D)  $\frac{1}{4}$

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

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

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

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

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

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

- 58) Reduce  $\frac{72}{180}$  to lowest terms. 58) \_\_\_\_\_
- A)  $\frac{72}{180}$       B)  $\frac{6}{15}$       C)  $\frac{36}{90}$       D)  $\frac{2}{5}$
- 59) Which fraction is equivalent to  $\frac{7}{8}$  and has a denominator of 56? 59) \_\_\_\_\_
- A)  $\frac{56}{64}$       B)  $\frac{35}{56}$       C)  $\frac{49}{56}$       D)  $\frac{15}{56}$
- 60) Which fraction is equivalent to  $\frac{3}{5}$  and has a denominator of 30? 60) \_\_\_\_\_
- A)  $\frac{18}{30}$       B)  $\frac{9}{30}$       C)  $\frac{30}{50}$       D)  $\frac{3}{30}$
- 61) Which fraction is equivalent to  $\frac{4}{7}$  and has a denominator of 28? 61) \_\_\_\_\_
- A)  $\frac{3}{28}$       B)  $\frac{16}{28}$       C)  $\frac{28}{49}$       D)  $\frac{8}{28}$
- 62) If each inch on a U.S. customary rule is divided into 32 parts, what part of an inch would be indicated by the 5<sup>th</sup> hash mark in a inch? (Illustrate with a drawing.) 62) \_\_\_\_\_
- A)  $\frac{5}{64}$  inch      B)  $\frac{5}{32}$  inch      C)  $\frac{5}{16}$  inch      D)  $\frac{1}{4}$  inch
- 63) If one inch on a U.S. customary rule is divided into 16 parts, what is the length of each part of the inch? 63) \_\_\_\_\_
- A)  $\frac{1}{17}$  inch      B) 16 inches      C)  $\frac{1}{16}$  inch      D)  $\frac{1}{4}$  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  $\frac{7}{9}$  to a repeating decimal. 86) \_\_\_\_\_  
 A)  $0.777\frac{7}{9}$       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)  $\frac{24}{100}$       B)  $\frac{6}{25}$       C)  $\frac{24}{1000}$       D)  $\frac{3}{125}$
- 88) The length of a screw is 4.275 in. Represent this length as a mixed number. 88) \_\_\_\_\_  
 A)  $3\frac{3}{4}$       B)  $3\frac{5}{8}$       C)  $4\frac{11}{40}$       D)  $3\frac{7}{8}$
- 89) Which fraction represents a measure of 0.3475 ft.? 89) \_\_\_\_\_  
 A)  $\frac{3}{16}$       B)  $\frac{3475}{100}$       C)  $\frac{139}{400}$       D)  $\frac{27}{80}$
- 90) Change  $1\frac{7}{8}$  to a decimal. 90) \_\_\_\_\_  
 A) 0.1875      B) 9.75      C) 1.875      D) 0.975
- 91) Write  $\frac{7}{12}$  as a decimal to the hundredths place with remainder expressed as a fraction. 91) \_\_\_\_\_  
 A)  $.58\frac{12}{100}$       B)  $.58\frac{1}{3}$       C)  $.583\frac{1}{3}$       D)  $.58\frac{1}{25}$
- 92) A plan needs a gap of  $\frac{5}{8}$  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)  $\frac{5}{12}$       B)  $\frac{3}{4}$       C)  $\frac{2}{3}$       D)  $\frac{1}{2}$       E)  $\frac{6}{7}$
- 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

- 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 temperature is highest? 108) \_\_\_\_\_  
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.

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- 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  $\frac{3}{16}$  in. lock washer is used and a  $\frac{1}{8}$  in. nut is used? 111) \_\_\_\_\_

- 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 and the outside covering is  $2\frac{15}{16}$  in. thick. What is the total thickness of the wall? 112) \_\_\_\_\_

- 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:  $2\frac{11}{14} + \frac{9}{35}$

116) \_\_\_\_\_

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

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

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

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

E) none of the above

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

to whole or mixed numbers.

A)  $\frac{3}{8}$

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

C)  $1\frac{3}{4}$

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

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

changed to whole or mixed numbers.

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

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

C)  $\frac{5}{8}$

D)  $1\frac{3}{16}$

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

changed to whole or mixed numbers.

A)  $5\frac{1}{8}$

B)  $4\frac{1}{8}$

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

D)  $3\frac{1}{8}$

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

did Joe add?

A)  $7\frac{1}{2}$  qt.

B)  $7\frac{1}{4}$  qt.

C) 7 qt.

D)  $7\frac{3}{4}$  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 127) \_\_\_\_\_

changed to whole or mixed numbers.

A)  $1\frac{9}{10}$

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

C)  $\frac{19}{24}$

D)  $1\frac{19}{24}$

128) Add  $10 + 4\frac{4}{5}$  and reduce answers to lowest terms with improper fractions 128) \_\_\_\_\_

changed to whole or mixed numbers.

A)  $18\frac{4}{5}$

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

C)  $6\frac{4}{5}$

D)  $14\frac{4}{5}$

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 129) \_\_\_\_\_

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)  $7\frac{11}{16}$

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

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

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

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

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

E) none of the above

132) Ted has a wall anchor that measures  $1\frac{5}{16}$  inches. The screw he wishes to use is  $1\frac{1}{4}$  inches. By how much is the anchor longer or shorter than the screw? 132) \_\_\_\_\_

- 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 additional  $\frac{1}{8}$  inches. How long is the finished board? 133) \_\_\_\_\_

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

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

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:  $\frac{11}{16} - \frac{5}{8}$  142) \_\_\_\_\_

A)  $\frac{3}{8}$

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

C)  $\frac{1}{8}$

D)  $\frac{1}{16}$

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

A)  $1\frac{7}{8}$

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

C) 1

D)  $4\frac{1}{8}$

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

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

B)  $2\frac{1}{9}$

C)  $3\frac{2}{9}$

D)  $2\frac{2}{0}$

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

145) A machine part is fabricated to be  $3\frac{5}{8}$  inch long with a tolerance of  $\pm \frac{1}{32}$  inch. What is the smallest and largest the part can be? 145) \_\_\_\_\_

146) A machine part is fabricated to be  $8\frac{1}{4}$  inch long with a tolerance of  $\pm \frac{1}{32}$  inch. What is the smallest and largest the part can be? 146) \_\_\_\_\_

147) Find the mistake in the following problem: 147) \_\_\_\_\_  
$$2\frac{1}{2} - 1\frac{2}{3} = 2\frac{3}{6} - 1\frac{4}{6} = 1\frac{1}{6}$$

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

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

A)  $1\frac{11}{20}$

B)  $2\frac{7}{24}$

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

D)  $3\frac{19}{20}$

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

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

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

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

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

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

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

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

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

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

154) A concrete foundation includes  $10\frac{1}{3}$  inches fill. If the foundation is to be 32 inches thick, how thick must the concrete layer be? 154) \_\_\_\_\_

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

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

155) \_\_\_\_\_

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

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

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

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

E) none of the above

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

156) \_\_\_\_\_

A)  $3\frac{3}{10}$

B)  $3\frac{19}{20}$

C)  $2\frac{7}{24}$

D)  $1\frac{11}{20}$

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:  $\frac{8}{9} \times \frac{3}{4} \times \frac{3}{10}$

158) \_\_\_\_\_

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

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

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

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

E) none of the above

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

A) 2

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

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

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

163) Multiply:  $1\frac{2}{3} \times 3\frac{1}{5}$  163) \_\_\_\_\_

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

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

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

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

E) none of the above

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

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

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

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

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

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

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

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

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

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

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

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

168) Standard typing paper is  $8\frac{1}{2}$  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  $\times$  Width) 168) \_\_\_\_\_

169) A plumber needs 6 pieces of pipe each  $16\frac{5}{8}$  inches long. If  $\frac{1}{8}$  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  $3\frac{3}{8}$  inches long. Each cut wastes  $\frac{1}{16}$  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  $7\frac{5}{8}$  inches high. What is the total rise of the steps? 171) \_\_\_\_\_

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





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

181) \_\_\_\_\_

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

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:  $\frac{8}{7} \div \frac{10}{6}$

189) \_\_\_\_\_

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

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

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

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

E) none of the above

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

190) \_\_\_\_\_

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

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

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

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

E) none of the above

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

191) \_\_\_\_\_

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

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

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

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

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

192) \_\_\_\_\_

A)  $5\frac{1}{10}$

B)  $\frac{10}{51}$

C)  $5\frac{2}{27}$

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

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

- 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.

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? 194) \_\_\_\_\_

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

195) What is the reciprocal of 4.3? 195) \_\_\_\_\_

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

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

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

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

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

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

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

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

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

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

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

E) none of the above

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

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

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

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

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

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

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

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

E) none of the above

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

A) Mixed-decimal fraction

B) Proper fraction

C) Decimal fraction

D) Complex fraction

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: 208) \_\_\_\_\_

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

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

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

C)  $4\frac{9}{10}$

D)  $\frac{21}{40}$

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

$$\frac{\frac{3}{8}}{6}$$

A)  $\frac{1}{16}$

B) 16

C) 4

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

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

210) Five boards  $3\frac{3}{4}$  inches long are cut from a piece of board that is 41 inches long. Allow  $\frac{1}{8}$  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  $32\frac{3}{16}$  inches cut from a length of molding measuring  $225\frac{5}{16}$  inches long. If the length of the shelf includes the saw cut, how many shelves are in this bookshelf? 211) \_\_\_\_\_

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

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

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

- 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 whole or mixed numbers:  $\frac{1}{6} \div \frac{1}{2}$  216) \_\_\_\_\_
- 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 in the  $\frac{3}{4}$  mile? 217) \_\_\_\_\_
- 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)  $\frac{1}{8}$



219) How many pieces of fabric that are each  $1\frac{2}{3}$  yards can be cut from a bolt that has 10 yards of fabric? 219) \_\_\_\_\_

- 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 many books are in the stack? 220) \_\_\_\_\_

- 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 improper fractions to whole or mixed numbers:  $\frac{12\frac{1}{2}}{100}$  221) \_\_\_\_\_

- 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:  $\frac{4}{5} - \left(\frac{2}{3}\right)^2 =$  224) \_\_\_\_\_

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

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

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

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

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

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

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

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

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

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

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

improper fractions changed to whole or mixed numbers.

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

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

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

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

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

A) 126

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B)  $\frac{35}{265}$

C)  $7\frac{11}{35}$

D)  $8\frac{3}{4}$

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

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

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

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

D) 15

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

A)  $90\frac{23}{48}$

B)  $84\frac{5}{24}$

C)  $90\frac{23}{24}$

D)  $84\frac{5}{48}$

## Answer Key

Testname: UNTITLED2

- 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.

Answer Key

Testname: UNTITLED2

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

## Answer Key

Testname: UNTITLED2

- 90) C  
91) B  
92) B  
93) A  
94) B  
95) C  
96)  $\frac{3}{8}, \frac{5}{12}, \frac{3}{4}, \frac{6}{7}$   
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)  $\frac{15}{16}$  in.  
126) To add, you need a common denominator.  
$$\frac{3}{4} + \frac{5}{6} = \frac{9}{12} + \frac{10}{12} = \frac{19}{12} \text{ or } 1\frac{7}{12}$$
  
127) D  
128) D  
129) D  
130) Answers will vary.  
131) D  
132) B

Answer Key

Testname: UNTITLED2

133) B

134) B

135) D

136) C

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

138) B

139) A

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

141) C

142) D

143) A

144) A

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

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

147) Borrowing is required.

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

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)  $58\frac{1}{2}$  in<sup>2</sup>

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

## Answer Key

Testname: UNTITLED2

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

171) D

172) A

173) A

174) Answers will vary.

175) Answers will vary.

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

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

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

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

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

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

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)  $\frac{23}{55}$

198) C

199) 1

200) C

201) D

202) D

203) B

204) B

205) C



Answer Key

Testname: UNTITLED2

206) B

207) B

208) D

209) A

210)  $21\frac{5}{8}$  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