Practice Questions

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

Find the LCM of the set of numbers.

1) 3, 5, 12
   A) 60       B) 180       C) 12       D) 15
   1) __________

2) 24, 54, 9
   A) 108      B) 216      C) 72       D) 54
   2) __________

3) 12, 44, 16, 88
   A) 288      B) 1584     C) 528      D) 1056
   3) __________

Solve the problem.

4) Cory and Melissa are racing electronic cars around a circular track. They begin at the same time going in the same direction. Cory’s car completes a revolution in 45 seconds, while Melissa’s car completes a revolution in 40 seconds. How long will it take them before both cars reach the starting point again simultaneously?
   A) 144 seconds      B) 720 seconds      C) 360 seconds      D) 72 seconds
   4) __________

5) Robert has built a mechanical model solar system with three balls representing planets at the ends of rods attached to the center representing the sun. The planets are aligned when he turns on the motor. The innermost planet makes a revolution in 18 seconds, the middle planet makes a revolution in 30 seconds, and the outermost planet makes a revolution in 42 seconds. After how many seconds will the planets be aligned again?
   A) 315 seconds      B) 630 seconds      C) 945 seconds      D) 1260 seconds
   5) __________

6) A cereal manufacturer uses three large overhead bins to hold the three ingredients in one of its cereal mixes. Bin A delivers a premeasured quantity of dried fruit every 33 minutes, bin B delivers raisins every 6 minutes, and bin C delivers flakes every 15 minutes. If they start the morning shift at the same time, how long before they deliver their ingredients at the same time again?
   A) 165 minutes      B) 110 minutes      C) 660 minutes      D) 330 minutes
   6) __________

7) The earth, Jupiter, Saturn, and Neptune all revolve around the sun. The earth takes 1 year, Jupiter approximately 12 years, Saturn approximately 30 years, and Neptune approximately 165 years to make a complete revolution. How often will Jupiter and Neptune appear in the same direction in the night sky as seen from earth?
   [Hint: Find the LCM of 12 and 165]
   A) Every 1320 years      B) Every 1980 years
   C) Every 330 years      D) Every 660 years
   7) __________

Add and simplify.

8) $\frac{1}{4} + \frac{3}{20}$
   A) $\frac{1}{6}$      B) 1      C) $\frac{1}{5}$      D) $\frac{2}{5}$
   8) __________

9) $\frac{2}{3} + \frac{1}{12}$
   A) $\frac{3}{4}$      B) $\frac{9}{12}$      C) $\frac{1}{4}$      D) $\frac{7}{12}$
   9) __________
10) \[ \frac{7}{10} + \frac{33}{100} \]  
A) \( \frac{103}{100} \)  
B) \( \frac{2}{5} \)  
C) \( \frac{4}{11} \)  
D) \( \frac{103}{10} \)

11) \( \frac{11}{7} + \frac{0}{1} \)  
A) \( \frac{18}{7} \)  
B) \( \frac{11}{7} \)  
C) 0  
D) \( \frac{11}{8} \)

12) \( \frac{2}{10} + \frac{8}{100} + \frac{6}{1000} \)  
A) \( \frac{143}{500} \)  
B) \( \frac{53}{500} \)  
C) \( \frac{2}{125} \)  
D) \( \frac{503}{500} \)

13) \( \frac{10}{16} + \frac{9}{24} + \frac{17}{32} \)  
A) \( \frac{3}{16} \)  
B) \( \frac{109}{24} \)  
C) \( \frac{49}{16} \)  
D) \( \frac{49}{32} \)

14) \( \frac{1}{2} + \frac{9}{8} + \frac{3}{4} \)  
A) 7  
B) \( \frac{19}{8} \)  
C) \( \frac{13}{8} \)  
D) \( \frac{19}{4} \)

15) \( \frac{7}{10} + \frac{48}{100} + \frac{119}{1000} \)  
A) \( \frac{669}{1000} \)  
B) \( \frac{5619}{1000} \)  
C) \( \frac{1299}{1000} \)  
D) \( \frac{87}{500} \)

Solve.

16) Alan walked \( \frac{4}{5} \) mi to the store and then another \( \frac{9}{8} \) mi to his friend’s house. How far did he walk?  
A) 1 mi  
B) \( \frac{49}{40} \) mi  
C) \( \frac{41}{40} \) mi  
D) \( \frac{77}{40} \) mi

17) Linda walked \( \frac{7}{10} \) mi to the park and then another \( \frac{2}{15} \) mi to the cafe. How far did she walk in total?  
A) \( \frac{11}{30} \) mi  
B) \( \frac{3}{5} \) mi  
C) \( \frac{23}{30} \) mi  
D) \( \frac{5}{6} \) mi
18) A recipe calls for $\frac{1}{11}$ L of water and $\frac{4}{11}$ L of milk. If the recipe is halved, how much liquid will be needed?

- A) $\frac{5}{22}$ L
- B) $\frac{5}{11}$ L
- C) $\frac{8}{11}$ L
- D) $\frac{10}{11}$ L

19) A lawyer stacks three case files on top of each other. The thicknesses of the files are $\frac{5}{6}$, $\frac{3}{10}$, and $\frac{3}{18}$ inches. What is the total height of the stack of files?

- A) $\frac{83}{180}$ in.
- B) $\frac{13}{5}$ in.
- C) $\frac{11}{90}$ in.
- D) $\frac{13}{10}$ in.

Subtract and simplify.

20) $\frac{3}{4} - \frac{1}{20}$

- A) $\frac{1}{8}$
- B) $\frac{7}{2}$
- C) $\frac{7}{10}$
- D) $\frac{7}{40}$

21) $\frac{9}{10} - \frac{57}{100}$

- A) $\frac{33}{100}$
- B) $\frac{33}{10}$
- C) $\frac{8}{15}$
- D) $\frac{12}{25}$

22) $\frac{6}{25} - \frac{1}{20}$

- A) $\frac{95}{500}$
- B) $\frac{19}{100}$
- C) $\frac{1}{20}$
- D) $\frac{1}{5}$

23) $\frac{11}{75} - \frac{7}{150}$

- A) $\frac{1}{10}$
- B) $\frac{2}{75}$
- C) $\frac{4}{75}$
- D) $\frac{7}{50}$

Use $<$ or $>$ for $\square$ to write a true sentence.

24) $\frac{7}{9} \square \frac{5}{9}$

- A) $>$
- B) $<$

25) $\frac{4}{7} \square \frac{4}{5}$

- A) $<$
- B) $>$

26) $\frac{1}{18} \square \frac{4}{6}$

- A) $<$
- B) $>$
27) $\frac{13}{8} \square \frac{25}{13}$

A) <  \hspace{1cm} \text{B) >}

Solve and simplify.

28) $x + \frac{1}{18} = \frac{1}{3}$

A) $x = -\frac{5}{18}$  \hspace{1cm} \text{B) $x = \frac{7}{18}$}  \hspace{1cm} \text{C) $x = \frac{5}{9}$}  \hspace{1cm} \text{D) $x = \frac{5}{18}$}

29) $\frac{1}{2} + y = \frac{5}{6}$

A) $y = \frac{2}{3}$  \hspace{1cm} \text{B) $y = \frac{1}{3}$}  \hspace{1cm} \text{C) $y = \frac{4}{3}$}  \hspace{1cm} \text{D) $y = 2$}

30) $x + \frac{1}{3} = \frac{7}{8}$

A) $x = \frac{1}{4}$  \hspace{1cm} \text{B) $x = \frac{1}{3}$}  \hspace{1cm} \text{C) $x = \frac{13}{24}$}  \hspace{1cm} \text{D) $x = \frac{3}{4}$}

31) $\frac{4}{7} + m = \frac{6}{8}$

A) $m = \frac{1}{4}$  \hspace{1cm} \text{B) $m = \frac{5}{4}$}  \hspace{1cm} \text{C) $m = \frac{1}{28}$}  \hspace{1cm} \text{D) $m = \frac{5}{28}$}

32) $y + \frac{2}{25} = \frac{11}{15}$

A) $y = \frac{1}{5}$  \hspace{1cm} \text{B) $y = \frac{49}{75}$}  \hspace{1cm} \text{C) $y = \frac{9}{10}$}  \hspace{1cm} \text{D) $y = \frac{9}{25}$}

Solve.

33) Erika spent $\frac{5}{6}$ hr on her computer visiting the history channel and the discovery channel websites. She spent $\frac{1}{5}$ hr at the history channel website. How many hours did she spend at the discovery channel website?

A) $\frac{2}{15}$ hr  \hspace{1cm} \text{B) $\frac{3}{5}$ hr}  \hspace{1cm} \text{C) $\frac{4}{5}$ hr}  \hspace{1cm} \text{D) $\frac{19}{30}$ hr}

34) Johanna has a $\frac{3}{4}$-lb mixture of cashews and peanuts that includes $\frac{3}{16}$ lb of cashews. How many pounds of peanuts are in the mixture?

A) $\frac{9}{64}$ lb  \hspace{1cm} \text{B) 0 lb}  \hspace{1cm} \text{C) $\frac{9}{4}$ lb}  \hspace{1cm} \text{D) $\frac{9}{16}$ lb}
35) Bill has \(\frac{25}{36}\) yards of canvas from which he is cutting strips. He has cut \(\frac{6}{36}\) yards already. How much of the canvas is left?  
A) \(\frac{11}{9}\) yd  
B) \(\frac{19}{36}\) yd  
C) \(\frac{5}{9}\) yd  
D) \(\frac{1}{2}\) yd  

36) From a \(\frac{4}{5}\)-lb package of ground beef, a \(\frac{1}{3}\)-lb hamburger was made. How much ground beef is left in the package?  
A) \(\frac{11}{15}\) lb  
B) \(\frac{1}{5}\) lb  
C) \(\frac{2}{5}\) lb  
D) \(\frac{7}{15}\) lb  

37) Three partners share the ownership of a sailboat on Lake Michigan. One partner owns \(\frac{7}{12}\) of the boat and the second owns \(\frac{1}{6}\). How much of the boat does the third partner own?  
A) \(\frac{1}{2}\)  
B) \(\frac{5}{12}\)  
C) \(\frac{1}{3}\)  
D) \(\frac{1}{4}\)  

Solve the problem.  

38) Annie is packing for her trip to Hawaii. Her suitcase measures \(26\frac{2}{3}\) in. \(\times 20\frac{3}{4}\) in. \(\times 7\frac{3}{5}\) in. Convert \(26\frac{2}{3}, 20\frac{3}{4}, \text{ and } 7\frac{3}{5}\) to fraction notation.  
A) \(\frac{40}{39}, \frac{83}{30}, \frac{38}{35}\)  
B) \(\frac{80}{3}, \frac{83}{4}, \frac{38}{5}\)  
C) \(\frac{28}{3}, \frac{23}{4}, \frac{22}{7}\)  
D) \(\frac{40}{15}, \frac{83}{20}, \frac{38}{7}\)  

39) Johnny's Bakery cuts their blueberry pies into 6 slices and their pizzas into 8 slices. On a busy Saturday, they sold 49 slices of blueberry pie, or \(\frac{49}{6}\) pies, and 81 slices of pizza, or \(\frac{81}{8}\) pizzas. Convert \(\frac{49}{6}\) and \(\frac{81}{8}\) to mixed numerals.  
A) \(8\frac{8}{49}, 10\frac{10}{81}\)  
B) \(8\frac{1}{6}, 10\frac{1}{8}\)  
C) \(8\frac{1}{49}, 10\frac{1}{81}\)  
D) \(49\frac{1}{6}, 81\frac{1}{8}\)  

Convert to fraction notation.  

40) \(5\frac{1}{8}\)  
A) \(\frac{3}{4}\)  
B) \(\frac{41}{5}\)  
C) \(\frac{41}{40}\)  
D) \(\frac{41}{8}\)  

41) \(7\frac{3}{5}\)  
A) \(\frac{38}{3}\)  
B) \(\frac{35}{5}\)  
C) \(\frac{38}{5}\)  
D) \(\frac{35}{3}\)
42) \(6\frac{17}{100}\)
   A) \(\frac{702}{100}\) B) \(\frac{23}{100}\) C) \(\frac{617}{100}\) D) \(\frac{102}{100}\)

43) \(34\frac{3}{4}\)
   A) \(\frac{408}{4}\) B) \(\frac{51}{2}\) C) \(\frac{139}{4}\) D) \(\frac{37}{4}\)

44) \(248\frac{5}{7}\)
   A) 1240 B) \(\frac{1741}{7}\) C) 253 D) \(\frac{1240}{7}\)

Convert to a mixed numeral.
45) \(\frac{41}{3}\)
   A) \(\frac{2}{3}\) B) \(13\frac{2}{3}\) C) \(12\frac{2}{7}\) D) \(14\frac{2}{3}\)

46) \(\frac{24}{5}\)
   A) \(3\frac{4}{5}\) B) \(4\frac{4}{7}\) C) \(4\frac{4}{5}\) D) \(5\frac{4}{5}\)

47) \(\frac{43}{8}\)
   A) \(4\frac{3}{8}\) B) \(5\frac{3}{8}\) C) \(5\frac{3}{7}\) D) \(6\frac{3}{8}\)

48) \(\frac{14}{6}\)
   A) \(\frac{7}{3}\) B) \(3\frac{1}{3}\) C) \(2\frac{1}{3}\) D) \(2\frac{2}{3}\)

49) \(\frac{279}{7}\)
   A) \(279\frac{7}{279}\) B) \(39\frac{6}{7}\) C) \(279\frac{279}{7}\) D) \(\frac{7}{279}\)

Divide. Write a mixed numeral for the answer.
50) \(\frac{96}{4656}\)
   A) \(\frac{48}{2}\) B) \(\frac{47}{96}\) C) \(\frac{47}{96}\) D) \(\frac{47}{2}\)
51) \(11\overline{)12,054}\)
   A) 1095 \(\frac{8}{11}\)  
   B) 1095 \(\frac{9}{11}\)  
   C) 1094 \(\frac{9}{11}\)  
   D) 1094 \(\frac{8}{11}\)  

52) \(103\overline{)5257}\)
   A) 50 \(\frac{2}{35}\)  
   B) 49 \(\frac{2}{35}\)  
   C) 49 \(\frac{1}{15}\)  
   D) 50 \(\frac{1}{15}\)  

53) \(884\overline{)99,822}\)
   A) 112 \(\frac{457}{442}\)  
   B) 113 \(\frac{407}{442}\)  
   C) 112 \(\frac{407}{442}\)  
   D) 112 \(\frac{201}{221}\)  

Add. Write a mixed numeral for the answer.
54) \(20 \frac{3}{4} + 17 \frac{7}{9} + \frac{1}{6}\)
   A) 38 \(\frac{1}{2}\)  
   B) 37 \(\frac{25}{36}\)  
   C) 38 \(\frac{25}{36}\)  
   D) 39 \(\frac{25}{36}\)  

\(\frac{3}{6}\)
\(\frac{1}{3}\)
\(\frac{3}{10}\)
55) \(+ \frac{1}{5}\)
   A) 6 \(\frac{2}{3}\)  
   B) 5 \(\frac{3}{2}\)  
   C) 5 \(\frac{5}{21}\)  
   D) 5 \(\frac{2}{3}\)  

56) \(4 \frac{3}{4} + 5 \frac{11}{12} + 4 \frac{4}{5}\)
   A) 15 \(\frac{6}{7}\)  
   B) 592 \(\frac{7}{15}\)  
   C) 15 \(\frac{37}{15}\)  
   D) 15 \(\frac{7}{15}\)  

Subtract. Write a mixed numeral for the answer.
57) \(15\frac{3}{5} - \frac{7}{2}\)
   A) 5 \(\frac{1}{2}\)  
   B) 8 \(\frac{1}{2}\)  
   C) 7 \(\frac{1}{2}\)  
   D) 8 \(\frac{1}{10}\)
58) \[
\begin{align*}
17\frac{3}{4} - 17 \frac{20}{20} &= A) 17\frac{9}{10} & B) 16\frac{9}{10} & C) 15\frac{9}{10} & D) 16
\end{align*}
\]

59) \[
\begin{align*}
18\frac{8}{9} - 17 \frac{18}{18} &= A) 17\frac{17}{18} & B) 18\frac{17}{18} & C) 16\frac{17}{18} & D) 17
\end{align*}
\]

60) \[
\begin{align*}
11\frac{1}{4} - 2\frac{9}{16} &= A) 9\frac{11}{16} & B) 8\frac{11}{16} & C) 8\frac{5}{16} & D) 8\frac{2}{3}
\end{align*}
\]

Solve. Write a mixed numeral for the answer.

61) An attorney drove 10\frac{1}{2} miles from his home to a client's home and another 17\frac{1}{9} miles to get to his office. How far did he drive in total? 61)

\[
\begin{align*}
\text{A) } 28\frac{11}{18} \text{ mi} & & \text{B) } 10\frac{11}{18} \text{ mi} & & \text{C) } 26\frac{11}{18} \text{ mi} & & \text{D) } 27\frac{11}{18} \text{ mi}
\end{align*}
\]

62) The second tallest child in a class is 33\frac{2}{3} inches tall. The tallest child is 4\frac{11}{12} inches taller. How tall is the tallest child in the class? 62)

\[
\begin{align*}
\text{A) } 38\frac{7}{12} \text{ in.} & & \text{B) } 37\frac{19}{12} \text{ in.} & & \text{C) } 37\frac{7}{12} \text{ in.} & & \text{D) } 37\frac{2}{3} \text{ in.}
\end{align*}
\]

63) Derek spent 6\frac{3}{4} hours studying for his math exam and another 6\frac{9}{16} hours doing his math homework. How long did he spend on math in total? 63)

\[
\begin{align*}
\text{A) } 12\frac{3}{4} \text{ hr} & & \text{B) } 12\frac{5}{16} \text{ hr} & & \text{C) } 12\frac{21}{16} \text{ hr} & & \text{D) } 13\frac{5}{16} \text{ hr}
\end{align*}
\]
64) Find the perimeter (distance around) of the polygon below. Each side of the polygon has the same length.

\[ \text{side length } = 8 \frac{3}{4} \text{ yd} \]

A) \(57 \frac{3}{4} \text{ yd}\)  B) 58 yd  C) 66 yd  D) 56 \(\frac{1}{4}\) yd

65) June wants to work for 11 \(\frac{1}{2}\) hours at her part-time job this week. She has already worked 4 \(\frac{3}{4}\) hours. How many more hours does she need to work?

A) 6 \(\frac{3}{4}\) hr  B) 6 hr  C) 7 \(\frac{3}{4}\) hr  D) 5 \(\frac{3}{4}\) hr

66) A Boeing 767 flew 920 mi on a nonstop flight. On the return flight, it landed after having flown 530 \(\frac{2}{3}\) mi. How far was the plane from its original point of departure?

A) 389 \(\frac{2}{3}\) mi  B) 390 \(\frac{2}{3}\) mi  C) 389 \(\frac{1}{3}\) mi  D) 390 \(\frac{1}{3}\) mi

67) Peter must practice the piano 12 \(\frac{1}{4}\) hours per week. He has already practiced 2 \(\frac{1}{2}\) hours. How many more hours does he need to practice?

A) 10 \(\frac{3}{4}\) hr  B) 9 \(\frac{3}{4}\) hr  C) 8 \(\frac{3}{4}\) hr  D) 9 hr

68) Brian was training to run a marathon. During the three-day period before the race he decided that he would train for a total of 11 hours. If he trained for 1 \(\frac{2}{5}\) hours on the first day and 3 \(\frac{3}{10}\) hours on the second day, how many hours would he need to train on the third day?

A) 6 \(\frac{1}{2}\) hr  B) 6 \(\frac{3}{10}\) hr  C) 6 \(\frac{2}{5}\) hr  D) 7 \(\frac{3}{10}\) hr
69) Find the length of the section represented by $x$ in the figure.

\[ a = 2\frac{7}{12} \]
\[ b = 11\frac{7}{12} \]

A) $11\frac{7}{12}$  B) $6\frac{7}{12}$  C) $6\frac{5}{12}$  D) $19\frac{5}{12}$

70) Find the length of the section represented by $x$ in the figure.

\[ a = 25\frac{3}{4} \]
\[ b = 1\frac{5}{16} \]
\[ c = 14\frac{1}{4} \]

A) $12\frac{13}{16}$  B) $10\frac{5}{16}$  C) $38\frac{11}{16}$  D) $10\frac{3}{16}$

Multiply. Write a mixed numeral for the answer.

71) $1\frac{3}{7} \cdot \frac{3}{5}$

A) $1\frac{9}{35}$  B) $\frac{4}{7}$  C) $3\frac{6}{7}$  D) $\frac{6}{7}$
72) $\frac{3}{4} \times \frac{4}{8}$
   A) $\frac{3}{32}$  
   B) $\frac{3}{32}$  
   C) $\frac{7}{32}$  
   D) $\frac{7}{32}$

73) $3 \cdot \frac{2}{9} \div \frac{3}{7}$
   A) $6 \frac{4}{7}$  
   B) $5 \frac{6}{7}$  
   C) $6 \frac{5}{7}$  
   D) $5 \frac{5}{7}$

74) $\frac{2}{5} \cdot \frac{1}{3} \cdot \frac{1}{2}$
   A) $217 \frac{31}{50}$  
   B) $182 \frac{11}{50}$  
   C) $180 \frac{1}{25}$  
   D) $\frac{1}{10}$

Divide. Write a mixed numeral for the answer.

75) $\frac{8}{9} + 13$
   A) $\frac{3}{9}$  
   B) $\frac{2}{9}$  
   C) $\frac{1}{9}$  
   D) $\frac{2}{8}$

76) $3 \frac{3}{5} + 2 \frac{5}{6}$
   A) $2 \frac{23}{85}$  
   B) $1 \frac{23}{85}$  
   C) $1 \frac{23}{84}$  
   D) $1 \frac{24}{85}$

77) $5 \frac{1}{5} + 1 \frac{3}{8}$
   A) $3 \frac{43}{55}$  
   B) $3 \frac{44}{55}$  
   C) $3 \frac{43}{54}$  
   D) $4 \frac{43}{55}$

78) $\frac{2}{9} + \frac{2}{9}$
   A) 10  
   B) $8 \frac{1}{2}$  
   C) 11  
   D) 9

79) $26 \frac{2}{3} + 30$
   A) $\frac{8}{9}$  
   B) $\frac{13}{15}$  
   C) 800  
   D) $\frac{1}{8}$
Solve. Write a mixed numeral for the answer.

80) The population of Anna’s grandmother’s country is \(1\frac{1}{4}\) times the population of Anna’s country. The population of Anna’s country is 360 million. What is the population of Anna’s grandmother’s country?

A) 288 million  
B) 550 million  
C) 450 million  
D) 90\(\frac{1}{4}\) million

81) In one city, the average adult consumes \(3\frac{1}{4}\) ounces of chocolate per week. How much chocolate do 40 average adults consume per week?

A) 130 oz  
B) 131 oz  
C) 12\(\frac{4}{13}\) oz  
D) 30\(\frac{1}{4}\) oz

82) Fahrenheit temperatures can be obtained from Celsius (centigrade) by multiplying by \(\frac{4}{5}\) and adding 32°. What Fahrenheit temperature corresponds to a Celsius temperature of 58°?

A) 136\(\frac{2}{5}\) °F  
B) 90\(\frac{4}{5}\) °F  
C) 78\(\frac{2}{5}\) °F  
D) 162 °F

83) The floor of a rectangular room is to be tiled with \(\frac{1}{3}\) foot square tiles along a \(9\frac{3}{8}\) foot wall. How many tiles will be needed along the wall?

A) 27\(\frac{3}{8}\) tiles  
B) 30 tiles  
C) 28\(\frac{1}{8}\) tiles  
D) 3\(\frac{1}{8}\) tiles

84) Stock in a company is selling for $14\(\frac{1}{2}\) per share. If someone purchases $899 worth of stock in this company, how many shares did they get?

A) 62 shares  
B) 436 shares  
C) 899 shares  
D) 1798 shares

85) A car traveled 315 miles on \(13\frac{1}{8}\) gallons of gas. How many miles per gallon did it get?

A) 24\(\frac{3}{13}\) mpg  
B) 24 mpg  
C) 25 mpg  
D) 24\(\frac{2}{13}\) mpg

86) The weight of a certain gas is \(5\frac{1}{4}\) kg per cubic meter. How many cubic meters would be occupied by 105 kg of the gas?

A) \(\frac{1}{20}\) cu m  
B) 2756\(\frac{1}{4}\) cu m  
C) 20 cu m  
D) 21 cu m

87) The population of the country where Ken lives is \(1\frac{3}{5}\) times the population of the country where he was born. The population of the country where he lives is approximately 48,000,000. What is the approximate population of the country where he was born?

A) 30,000,000  
B) 28,500,000  
C) 31,000,000  
D) 29,000,000
88) The dimensions of a rectangular mural on the wall of Amy's bedroom are $2\frac{3}{5}$ feet by $3\frac{1}{3}$ feet. What is the area of the mural?

A) $6\frac{13}{15}$ ft$^2$  
B) $6\frac{1}{5}$ ft$^2$  
C) 8 ft$^2$  
D) $8\frac{2}{3}$ ft$^2$

89) A square piece of paper has a side length of $7\frac{5}{8}$ inches. A square of side length $\frac{1}{2}\cdot s$ is cut from one corner of the piece of paper. Find the area of the piece of paper that remains.

A) $41\frac{125}{256}$ in.$^2$  
B) $43\frac{155}{256}$ in.$^2$  
C) $54\frac{21}{64}$ in.$^2$  
D) $39\frac{13}{16}$ in.$^2$

90) A rectangular lot measures $286\frac{1}{3}$ feet by $220\frac{1}{2}$ feet. A building with dimensions of 120 feet by $35\frac{3}{4}$ feet is built on the lot. How much area is left over?

A) $58,719\frac{5}{12}$ ft$^2$  
B) $58,935\frac{3}{4}$ ft$^2$  
C) $58,630\frac{1}{6}$ ft$^2$  
D) $58,846\frac{1}{2}$ ft$^2$

91) Stained Glass Solutions sells a framed stained glass window as shown below. Its dimensions are $28\frac{3}{4}$ inches wide by $33\frac{3}{8}$ inches high. What is the perimeter of the framed stained glass window?

A) $959\frac{17}{32}$ in.  
B) $63\frac{3}{4}$ in.  
C) $126\frac{1}{8}$ in.  
D) $124\frac{1}{4}$ in.
Refer to the following recipe to answer the question. Give your answer as a mixed numeral.

Grandma's Fork Cookies

\[
\begin{align*}
\frac{1}{2} \text{ cup brown sugar} \\
\frac{1}{2} \text{ cup white sugar} \\
\frac{1}{4} \text{ cup shortening} \\
1 \text{ pinch salt} \\
3 \text{ eggs} \\
2 \frac{1}{2} \text{ tsp soda} \\
2 \frac{1}{4} \text{ tsp cream of tartar} \\
\frac{1}{2} \text{ tsp vanilla}
\end{align*}
\]

Cream sugars and shortening. Beat in remaining ingredients. Add flour to stiffen like regular cookie dough. Roll into balls, then flatten with a fork. Cook until brown.

92) If the recipe is doubled, how much brown sugar will be needed?
   A) 2 \frac{1}{2} \text{ cups}   
   B) 4 \text{ cups}   
   C) 5 \text{ cups}   
   D) 3 \text{ cups} 

93) Find the amount of white sugar needed if you take 2 \frac{1}{2} times the recipe.
   A) 3 \frac{1}{4} \text{ cups}   
   B) 3 \frac{1}{2} \text{ cups}   
   C) 3 \text{ cups}   
   D) 3 \frac{3}{4} \text{ cups} 

94) Find the amount of cream of tartar needed if you take 1 \frac{1}{2} times the recipe.
   A) 3 \frac{1}{2} \text{ tsp}   
   B) 4 \frac{1}{8} \text{ tsp}   
   C) 3 \frac{3}{4} \text{ tsp}   
   D) 3 \frac{3}{8} \text{ tsp} 

Simplify.

95) \(\frac{2}{3} \cdot \frac{2}{5} + \frac{4}{7} \cdot \frac{3}{4}\)
   A) \(\frac{73}{105}\)   
   B) \(\frac{73}{84}\)   
   C) \(\frac{25}{22}\)   
   D) \(\frac{146}{105}\) 

96) \(\frac{2}{9} \cdot \left(\frac{1}{10} + \frac{1}{5}\right) \cdot 18\)
   A) \(\frac{3}{5}\)   
   B) \(\frac{4}{5}\)   
   C) \(1\frac{1}{5}\)   
   D) \(2\frac{2}{5}\)
97) \[
\left(\frac{2}{3}\right)^2 + 3\frac{1}{3} + 1\frac{1}{5}
\]
A) \(\frac{4}{27}\)  
B) \(\frac{4}{9}\)  
C) \(\frac{2}{9}\)  
D) \(\frac{1}{9}\)

98) \(1 + \frac{2}{3} \cdot \left(\frac{2}{3}\right)^2 + \left(\frac{2}{3}\right)^3\)

A) \(\frac{14}{27}\)  
B) \(\frac{22}{27}\)  
C) \(\frac{7}{27}\)  
D) \(\frac{25}{27}\)

99) \(\frac{2}{3} - \frac{1}{6} + \left(\frac{1}{4} + \frac{4}{5}\right)\)

A) \(\frac{10}{21}\)  
B) \(\frac{32}{63}\)  
C) \(\frac{14}{5}\)  
D) \(\frac{10}{63}\)

100) \(\left(\frac{2}{3} - \frac{1}{2}\right)^2 + 3 \cdot 1\frac{1}{8} + 18\)

A) \(\frac{177}{144}\)  
B) \(\frac{17}{48}\)  
C) \(\frac{79}{144}\)  
D) \(\frac{341}{1296}\)

Find the average of the set of numbers.
101) \(\frac{2}{6}, \frac{1}{8}, \text{ and } \frac{3}{4}\)

A) \(\frac{5}{24}\)  
B) \(\frac{1}{32}\)  
C) \(\frac{29}{72}\)  
D) \(\frac{29}{48}\)

102) \(\frac{1}{4}, \frac{5}{6},\) and \(\frac{1}{24}\)

A) \(\frac{1}{6}\)  
B) \(\frac{9}{16}\)  
C) \(\frac{7}{24}\)  
D) \(\frac{3}{8}\)

Solve. Write a mixed numeral for the answer.
103) Denise's triplets weighed \(3\frac{5}{8}\) lb, \(4\frac{3}{16}\) lb, and \(4\frac{1}{4}\) lb at birth. Find their average birth weight.

A) \(4\frac{1}{16}\) lb  
B) \(3\frac{47}{48}\) lb  
C) \(4\frac{1}{48}\) lb  
D) \(4\frac{1}{8}\) lb

104) A road acceleration test measures the time in seconds required to go from 0 mph to 60 mph. The results for five cars were as follows: \(6\frac{3}{10}\) sec, \(7\frac{2}{5}\) sec, \(8\frac{1}{10}\) sec, \(6\frac{4}{5}\) sec, and \(7\frac{1}{2}\) sec. What was the average time?

A) \(7\frac{27}{100}\) sec  
B) \(7\frac{1}{10}\) sec  
C) \(7\frac{31}{50}\) sec  
D) \(7\frac{11}{50}\) sec
A test of five light bulbs showed that they burned for the following lengths of time (in days): $17\frac{2}{3}$, $19\frac{1}{4}$, $20\frac{1}{2}$, $21$, and $18\frac{3}{4}$. For how many days, on average did the light bulbs burn?

A) $19\frac{7}{12}$ days  
B) $19\frac{17}{30}$ days  
C) $19\frac{13}{30}$ days  
D) $19\frac{1}{6}$ days

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

Provide an appropriate response.

106) Explain why, when rewriting a fraction with a different denominator, the fraction can be multiplied by another fraction whose numerator and denominator are the same.

107) Tell what you would do if you added the fraction parts of mixed numbers and the result was greater than 1.

108) Explain, in your own words, the least common multiple of two numbers.

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

109) Let $x$ represent a whole number. If the LCM for $x$ and 5 is equal to the product of 5 and $x$, what can you conclude about $x$?

i: $x$ is greater than 5  
ii: $x$ is smaller than 5  
iii: 5 is not a factor of $x$  
iv: 5 is a factor of $x$

A) iv only  
B) i and iii  
C) ii and iii  
D) iii only

110) Arrange the following numbers in order from smallest to largest.

$\frac{4}{9}$, $\frac{14}{11}$, $\frac{14}{9}$, $\frac{4}{11}$

A) $\frac{14}{11}$, $\frac{4}{9}$, $\frac{4}{11}$, $\frac{14}{9}$  
B) $\frac{14}{11}$, $\frac{14}{9}$, $\frac{4}{11}$, $\frac{4}{9}$

C) $\frac{14}{11}$, $\frac{4}{11}$, $\frac{14}{9}$  
D) $\frac{4}{9}$, $\frac{14}{11}$, $\frac{14}{9}$, $\frac{4}{11}$

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

111) A student added two mixed numbers in the following way:

$$5\frac{4}{9} + 3\frac{7}{9} = 8\frac{11}{9}$$

Explain in your own words what is wrong with the answer and give the correct answer.
A student is asked to perform the following division: $6 \div 2\frac{1}{2}$. He starts by writing $6 \div 2\frac{1}{2} = (6 \div 2) + (6 \div \frac{1}{2})$. Do you think this method will give the correct answer? If not, how should the student have proceeded?
Answer Key
Testname: UNTITLED1

1) A
2) B
3) C
4) C
5) B
6) D
7) D
8) D
9) A
10) A
11) B
12) A
13) D
14) B
15) C
16) D
17) D
18) A
19) D
20) C
21) A
22) B
23) A
24) A
25) A
26) A
27) A
28) D
29) B
30) C
31) D
32) B
33) D
34) D
35) B
36) D
37) D
38) B
39) B
40) D
41) C
42) C
43) C
44) A
45) B
46) C
47) B
48) C
49) B
50) A
Answer Key
Testname: UNTITLED1

51) B
52) D
53) C
54) C
55) D
56) D
57) D
58) B
59) A
60) B
61) D
62) A
63) D
64) A
65) A
66) C
67) B
68) B
69) C
70) D
71) D
72) C
73) C
74) A
75) B
76) B
77) A
78) A
79) A
80) C
81) A
82) A
83) C
84) A
85) B
86) C
87) A
88) D
89) B
90) D
91) D
92) D
93) D
94) D
95) A
96) C
97) C
98) A
99) A
100) C
Answer Key
Testname: UNTITLED1

101) C
102) D
103) C
104) D
105) C
106) Answers will vary. When the numerator and denominator are the same, the fraction is equal to 1. Any number multiplied by 1 is the number itself.
107) Answers will vary. You would carry from the fraction column to the whole number.
108) Answers will vary. The LCM of two whole numbers is the smallest whole number divisible by both those numbers.
109) D
110) C
111) Answers will vary. Possible answer: In a mixed number, the fraction part should be a proper fraction. The correct answer is \(9\frac{2}{9}\).
112) Answers will vary. Possible answer: No, this method is not correct. The first step should be to write \(2\frac{1}{2}\) as an improper fraction as follows:
\[
\begin{align*}
6 + 2\frac{1}{2} &= 6 + \frac{5}{2} \\
&= 6 \cdot \frac{2}{5} \\
&= \frac{12}{5} \\
&= 2\frac{2}{5}
\end{align*}
\]