REVIEW OF OPERATIONS OF FRACTIONS

Reduce to lowest terms.

1. \( \frac{3}{12} \)  
2. \( \frac{6}{18} \)  
3. \( \frac{8}{10} \)  
4. \( \frac{14}{21} \)

5. \( \frac{9}{15} \)  
6. \( \frac{8}{14} \)  
7. \( \frac{20}{25} \)  
8. \( \frac{10}{12} \)

9. \( \frac{8}{20} \)  
10. \( \frac{12}{16} \)  
11. \( \frac{20}{45} \)  
12. \( \frac{6}{16} \)

Change each improper fraction to a mixed number or whole number.

13. \( \frac{13}{2} \)  
14. \( \frac{11}{4} \)  
15. \( \frac{18}{3} \)  
16. \( \frac{7}{4} \)

17. \( \frac{40}{8} \)  
18. \( \frac{10}{7} \)  
19. \( \frac{16}{3} \)  
20. \( \frac{22}{9} \)

21. \( \frac{35}{7} \)  
22. \( \frac{19}{5} \)  
23. \( \frac{11}{3} \)  
24. \( \frac{30}{10} \)

Change to an improper fraction.

25. \( 3 \frac{1}{7} \)  
26. \( 5 \frac{2}{3} \)  
27. \( 7 \frac{3}{5} \)  
28. \( 4 \frac{3}{7} \)

29. \( 2 \frac{3}{4} \)  
30. \( 7 \frac{1}{8} \)  
31. \( 6 \frac{1}{5} \)  
32. \( 1 \frac{4}{7} \)
33. \( \frac{4}{3} \)  
34. \( \frac{7}{5} \)  
35. \( \frac{6}{2} \)  
36. \( \frac{7}{9} \)

Compute. Answer should be in lowest terms.

37. \( 5 \frac{3}{8} \)  
38. \( 8 \frac{2}{5} \)  
39. \( 8 \frac{3}{4} \)

\[ + 4 \frac{1}{8} \]
\[ + 9 \frac{3}{10} \]
\[ + 5 \frac{1}{2} \]

40. \( 3 \frac{2}{3} \)  
41. \( 6 \frac{5}{6} \)  
42. \( 7 \frac{1}{8} \)

\[ + 4 \frac{1}{2} \]
\[ + 2 \frac{3}{4} \]
\[ + 5 \frac{7}{8} \]

43. \( 8 \frac{4}{5} \)  
44. \( 9 \)  
45. \( 6 \frac{7}{9} \)

\[ -3 \frac{2}{5} \]
\[ -4 \frac{1}{4} \]
\[ -3 \frac{2}{3} \]

46. \( 5 \frac{1}{4} \)  
47. \( 8 \frac{2}{7} \)  
48. \( 7 \frac{1}{8} \)

\[ -3 \frac{1}{2} \]
\[ -4 \frac{3}{4} \]
\[ -4 \frac{5}{6} \]
49. $\frac{4}{5} \times 80$

50. $\frac{1}{4} \times 60$

51. $\frac{2}{3} \times \frac{5}{9}$

52. $\frac{3}{4} \times 6 \frac{1}{2}$

53. $7 \frac{1}{2} \times 3 \frac{2}{3}$

54. $8 \times 7 \frac{1}{4}$

55. $32 \div 2 \frac{2}{3}$

56. $3 \frac{1}{2} \div 4$

57. $3 \frac{2}{3} \div 1 \frac{2}{7}$

58. $16 \div 2 \frac{2}{3}$

59. $8 \frac{1}{3} \div \frac{1}{2}$

60. $40 \div 4 \frac{4}{5}$
DISCOUNT PROBLEMS – FRACTIONS

Find the discount (the amount of savings) for each problem.

1. At the big department store clearance, all items in the store are \( \frac{1}{2} \) off the listed (regular) price. How much money is being discounted?

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REGULAR PRICE</th>
<th>DISCOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.) Toaster</td>
<td>$20</td>
<td></td>
</tr>
<tr>
<td>b.) Hair dryer</td>
<td>$48</td>
<td></td>
</tr>
<tr>
<td>c.) Freezer</td>
<td>$350</td>
<td></td>
</tr>
<tr>
<td>d.) Couch</td>
<td>$725</td>
<td></td>
</tr>
<tr>
<td>e.) Washer/dryer</td>
<td>$1144</td>
<td></td>
</tr>
</tbody>
</table>

2. At Video World, they are having their annual Summer Sale. All items are \( \frac{1}{4} \) off the regular price. How much can be saved on the following?

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REGULAR PRICE</th>
<th>DISCOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.) VCR</td>
<td>$200</td>
<td></td>
</tr>
<tr>
<td>b.) DVD player</td>
<td>$480</td>
<td></td>
</tr>
<tr>
<td>c.) Big screen TV</td>
<td>$2188</td>
<td></td>
</tr>
<tr>
<td>d.) Computer</td>
<td>$1876</td>
<td></td>
</tr>
<tr>
<td>e.) Cassette deck</td>
<td>$88</td>
<td></td>
</tr>
</tbody>
</table>
3. Tommy B’s Office Supply is going out of business. To clear his inventory, Tommy marks \( \frac{1}{3} \) off the list price of all items. How much can be saved?

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REGULAR PRICE</th>
<th>DISCOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.) Printer</td>
<td>$180</td>
<td>________</td>
</tr>
<tr>
<td>b.) Desk</td>
<td>$450</td>
<td>________</td>
</tr>
<tr>
<td>c.) Notebook computer</td>
<td>$1827</td>
<td>________</td>
</tr>
<tr>
<td>d.) File cabinet</td>
<td>$285</td>
<td>________</td>
</tr>
<tr>
<td>e.) Day planner</td>
<td>$54</td>
<td>________</td>
</tr>
</tbody>
</table>
EVALUATING A FRACTION OF A NUMBER

Solve the following story problems.

1. Last year \(\frac{3}{5}\) of the Ladies Auxiliary baked brownies for the year-end fundraiser. If there were 120 members of the Ladies Auxiliary last year, how many baked brownies?

2. It has been cloudy 4 out of 5 days for the last month. If there were 30 days in the month, how many days were cloudy?

3. The student council surveyed the ticket buyers at last week’s football game and put the results of the information in a circle graph. Out of the 2,472 people who bought tickets for the game, how many were freshmen?

4. Jared spent 8 hours at his factory job last Monday. Two-thirds of the time, he worked on the Flex Line assembling air conditioners. How much time did he end up working on the Flex Line?

5. Mark earned $40 mowing lawns last week. He spent \(\frac{3}{5}\) of his money on two CDs. How much did he spend on these two CDs?
6. At Beecher City High School, \(\frac{4}{5}\) of the senior class plan on attending college at Lake Land Junior College. If there are 85 seniors at Beecher City H.S., how many plan on attending Lake Land?

7. Jake bought 4 \(\frac{1}{2}\) pounds of hamburger for the cookout. How much did it cost him if hamburger is $1.80 per pound?

8. Surveys indicate that two-thirds of all voters in Ward 5 plan on choosing Spike Jones for commissioner. If there are 500 voters in Ward 5, about how many will be voting for Spike Jones?

9. What is the cost of 9 square yards of carpet, if it sells for $18 a square yard?

10. Aunt Rose baked 2\(\frac{1}{2}\) dozen cookies. Her grandson, Ricky, ate \(\frac{1}{4}\) of them. How many cookies did Ricky eat?

11. Whitey needs to paint a block wall that is 75\(\frac{1}{2}\) feet long. After several hours he had finished \(\frac{3}{4}\) of it. How many feet did he finish painting?

12. Walter bought 500 marbles at the swap meet. Two-fifths of them were blue. How many marbles were blue?
VARIOUS FRACTION STORY PROBLEMS

Read carefully and solve.

1. McDonalds sold quarter-pound cheeseburgers for $.99 last Saturday. They sold 310 of these cheeseburgers. How many pounds of cheeseburgers did they sell last Saturday?

2. Tammy figured her math exam would be difficult unless she put in at least 15 hours of study time to prepare. She studied 2 1/2 hours on Monday, 3 hours on Tuesday, 4 3/4 hours on Wednesday, and 4 1/2 hours on Thursday. Did she study at least 15 hours?

3. Nadine bought a 20-pound bag of sugar. She used 7 3/5 pounds while making several dozen cookies. How much sugar did she have left?

4. Bud determined he needed 45 1/2 yards of wire fencing for his landscaping project. He already had 17 3/4 yards. How much more did he need to purchase?

5. Heidi bought an 18 ounce bottle of Castor Oil. If each dose is 3/4 ounce, how many doses are in the bottle?
6. Peg and Al needed $6\frac{1}{2}$ hours to travel 390 miles for their second honeymoon. What was their average rate in miles per hour?

7. Jared bought a 60 foot length of rope and cut it into $2\frac{3}{4}$ foot pieces. How many $2\frac{3}{4}$ foot pieces was he able to get?

8. Darrell bought an 80 pound bag of dog food. If $\frac{5}{8}$ of a pound are used to feed the dog each day, how many days will the bag of dog food last?

9. Oscar wanted to cook 8 crockpots of chili for the school fundraiser. If each crock pot requires $2\frac{3}{4}$ cans of diced tomatoes, how many cans of tomatoes should be buy?

10. Mr. Mayhood had $4\frac{1}{2}$ pounds of sand in a bucket. He put $2\frac{3}{4}$ pounds of sand around his flower bed. How much sand did he have left in the bucket?

11. Jodie works at the local candy store and sells candy by the pound. She sells $2\frac{1}{2}$ pounds of gumdrops, 3 pounds of orange slices, and $\frac{3}{4}$ pounds of gummi bears. How much candy did Jodie sell altogether?
12. Mindy bought $1\frac{3}{4}$ pounds of candy for herself and for each of three friends while she was at the candy store. How many pounds of candy did she buy?

13. Rob bought 160 pounds of dog food. Each of the dogs at his pet store ate $1\frac{1}{4}$ pounds. How many dogs did Rob feed?

14. Bruce was running in the 1500 meter race. He was leading the race after running $\frac{4}{5}$ of it. After how many meters was he leading the race?

15. Shelby bought $6\frac{1}{2}$ pounds of hamburger meat to make hamburger patties. However, $4\frac{2}{3}$ pounds of the hamburger had to be thrown away. How much of the hamburger meat did not get thrown away?

16. Cami drank $7\frac{1}{4}$ liters of water Monday, $5\frac{1}{2}$ liters of water on Tuesday, $9\frac{3}{4}$ liters of water on Wednesday, and $6\frac{1}{4}$ of water on Thursday. How much water did Cami drink during that four day span?
CUMULATIVE REVIEW

Read the problems carefully and solve.

1. Reduce.
   a.) \( \frac{18}{5} \)  
   b.) \( \frac{24}{10} \)

2. Change to an improper fraction.
   a.) \( \frac{7}{8} \)  
   b.) \( \frac{2}{5} \)

3. Compute.
   a.) \( \frac{5}{8} + \frac{7}{8} \)  
   b.) \( 9 \frac{2}{3} + 4 \frac{7}{9} \)  
   c.) \( 18 - 4 \frac{5}{6} \)
   d.) \( 9 \frac{1}{4} - 7 \frac{5}{6} \)  
   e.) \( 10 \times 6 \frac{1}{2} \)  
   f.) \( 3 \frac{1}{3} \times 4 \frac{3}{4} \)
   g.) \( 12 \div 1 \frac{2}{3} \)  
   h.) \( 3 \frac{4}{5} \div 2 \frac{1}{10} \)

4. Cosmo bought a power saw that was on sale for \( \frac{1}{3} \) off the listed price of $129. How much did Cosmo save?

5. Emmitt’s fix-it shop sells used alarm clocks. Although they usually cost $18, today Emmitt has taken \( \frac{2}{3} \) off the regular price. How much is discounted by buying an alarm clock today?
6. A bell rings every $\frac{1}{6}$ hour. Assuming it just rang, how many times will it ring in the next $\frac{2}{3}$ hour?

7. Each bag of apples weighs $4\frac{1}{2}$ pounds. How much would $3\frac{1}{2}$ bags of apples weigh?

8. The carpenter stacked 15 sheets of wall board on top of each other. If each sheet is $\frac{5}{8}$ inch thick, how high is the stack?

9. A machine uses gasoline at a rate of $\frac{1}{5}$ gallon an hour. So far $\frac{9}{10}$ of a gallon has been used. How many hours has the machine operated?

10. The circle graph shows the budget for the Taylor family. If the Taylor’s monthly income is $3,860, how much of their money goes for food?

11. Barry used $\frac{1}{4}$ of a pound of hamburger meat to make a patty for a barbecue. He needs 54 hamburgers. How many pounds of hamburger meat will he need?
12. The price after Thursday’s trading was $29\frac{5}{8}$ dollars. The price after Friday’s trading was $26\frac{1}{2}$ dollars. How much did the stock go down on Friday?

13. How many $2\frac{1}{2}$ inch length of ribbon can be cut from 45 inches of ribbon?

14. How many adults bought movie tickets if $\frac{3}{5}$ of the 2,750 tickets sold were purchased by adults?

15. Helen practiced the guitar $\frac{3}{4}$ hour in the morning, $\frac{3}{4}$ hour in the afternoon, and $1\frac{1}{2}$ hours in the evening. How long did Helen practice the guitar?

16. Sam spent $11\frac{3}{4}$ hours over 3 days to paint his bedroom. He spent $3\frac{1}{4}$ hours the first day and $3\frac{2}{3}$ hours the second day. How many hours did he spend on the third day to finish painting his bedroom?
17. Twenty-four pupils are in Mr. Robert’s class. Suppose \( \frac{3}{4} \) of his class are girls. How many of his pupils are girls? How many are boys?

18. An iron bar 468\( \frac{3}{4} \) inches long is to be cut into 6\( \frac{1}{4} \) inch sections. How many sections of this length will there be?

19. Mark practiced the piano for \( \frac{3}{4} \) hour on Wednesday, \( \frac{1}{2} \) hour on Thursday, and 2 hours on Friday. How many hours did he practice in all?

20. Shirley read for \( \frac{3}{5} \) hour in the morning and \( \frac{1}{2} \) hour in the afternoon. How much longer did she read in the morning than in the afternoon?
1.) Which of the following fractions has the largest value?

A.) \( \frac{11}{23} \)

B.) \( \frac{10}{21} \)

C.) \( \frac{9}{19} \)

D.) \( \frac{8}{17} \)

E.) \( \frac{6}{13} \)

2.) Which of the following fractions has the largest value?

A.) \( \frac{11}{25} \)

B.) \( \frac{7}{20} \)

C.) \( \frac{21}{50} \)

D.) \( \frac{2}{5} \)

E.) \( \frac{41}{100} \)

3.) Which group of fractions is listed from smallest to greatest?

A.) \( \frac{9}{10}, \frac{2}{3}, \frac{3}{5} \)

B.) \( \frac{3}{4}, \frac{1}{5}, \frac{2}{3} \)

C.) \( \frac{2}{5}, \frac{1}{3}, \frac{3}{4} \)

D.) \( \frac{2}{3}, \frac{3}{10}, \frac{4}{5} \)

E.) \( \frac{7}{10}, \frac{3}{4}, \frac{4}{5} \)
4.) Which is the equivalent multiplication problem for $\frac{3}{4} \div \frac{7}{9}$?

A.) $\frac{3}{4} \times \frac{7}{9}$

B.) $\frac{3}{4} \times \frac{9}{7}$

C.) $\frac{4}{3} \times \frac{7}{9}$

D.) $\frac{4}{3} \times \frac{9}{7}$

E.) None of these.

5.) $\frac{5}{8} \times \frac{1}{2}$

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

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

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

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

6.) A recipe calls for $2\frac{1}{2}$ cups of milk. How much milk will you need to make three times the recipe?

A. 5 cups
B. 6½ cups
C. 7 cups
D. 7½ cups
E. 9 cups

7.) A recipe calls for $3\frac{1}{2}$ cups of milk. How much milk will you need to double the recipe?

A. 5 cups
B. 5½ cups
C. 6½ cups
D. 7 cups
E. 7½ cups
8.) A can contains $\frac{1}{2}$ pint of paint. If we use $\frac{2}{3}$ of the paint, how much paint is left in the can?

A. $\frac{1}{2}$
B. $\frac{1}{3}$
C. $\frac{2}{3}$
D. $\frac{1}{6}$
E. $\frac{5}{6}$

9.) Jamila has a ribbon which is $21\frac{1}{3}$ inches long. Amy has a ribbon which is $17\frac{1}{2}$ inches long. If Amy gives Jamila half her ribbon, how much ribbon will Jamila now have?

A. $8\frac{3}{4}$ inches
B. $28\frac{1}{3}$ inches
C. $30\frac{1}{12}$ inches
D. $39\frac{1}{6}$ inches
E. $38\frac{5}{6}$ inches

10.) Stan biked 44 km in $3\frac{2}{3}$ hours. What was his average rate of speed? Use $D=rt$.

A. $161\frac{2}{3}$ kph
B. 15 kph
C. 12 kph
D. $3\frac{2}{3}$ kph
E. $\frac{2}{3}$ kph
11.) Which expression represents the mixed number $11 \frac{9}{14}$?

A.  $11 \times 9 + 14$
B.  $119 \div 14$
C.  $11 + (9 \div 14)$
D.  $11 \div 9 \times 14$
E.  $11 \times 9 \div 14$

12.) A car with a full tank of gas will travel 220 miles. If the fuel gauge on a car shows that the tank is three-fourths full. Which expression shows how to calculate the miles remaining before the tank is empty?

A.  $220 + 3 \times 4$
B.  $220 + 3 \div 4$
C.  $220 \div 4 + 3$
D.  $220 \times 4 - 3$
E.  $220 \times 3 \div 4$

13.) Which method could you always use for finding the LCD of a pair of fractions?

I. Multiply the denominators together
II. Find the LCM of your denominators.
III. Take the multiples of the larger denominator until the smaller denominator divides it.
IV. Find the prime factorization of each denominator and construct the LCD by using each prime factor's largest power.

A. I only
B. II and IV only
C. I, II, and III only
D. II, III, and IV only
E. IV only

14.) Which of the following lists does NOT consist entirely of prime numbers?

A.  2, 3, 5, 29
B.  11, 13, 17, 19
C.  13, 23, 29, 31
D.  2, 13, 17, 31
E.  1, 3, 5, 11
15.) The expression \( \frac{7}{x-5} \) is undefined when \( x \) is equal to:

A. 0  
B.  \(-5\)  
C.  5  
D.  7  
E.  10

16.) What distance can a plane travel if it travels at a rate of 845 mph for 6\(\frac{1}{2}\) hours?
Use the formula:  \( D = r \times t \)

A. 130 miles  
B. 851.5 miles  
C. 5492.5 miles  
D. 8456.5 miles  
E. 1235 miles

17.) A passenger train traveled 60 miles per hour for 3\(\frac{1}{2}\) hours and then increased its speed by 15 miles per hour for the next 2 hours. What was the total distance the train traveled?

A. 150 miles  
B. 210 miles  
C. 240 miles  
D. 360 miles  
E. 450 miles

18.) Jack bought \(\frac{1}{2}\) gallon of ice cream. He ate \(\frac{1}{2}\) of it. How much ice cream did he eat?

A. 1 gallon  
B. 3\(\frac{1}{4}\) gallon  
C. \(\frac{1}{2}\) gallon  
D. \(\frac{1}{4}\) gallon
19.) Which of the following statements below best completes this statement:
   A fraction is ____ ? ____.
   I. a ratio of two integers, a and b, b non-zero
   II. a percent
   III. a decimal
   IV. always a natural number

   A. I only
   B. I and IV
   C. I, II and III
   D. III only
   E. IV only

20. The fuel gauge on a car shows that the tank is three-fourths full. When filled, the tank holds 15 gallons. You can compute how many gallons are left in the tank by multiplying 15 by three-fourths. Which of the following is the correct way to enter this into your calculator?

   A. 15 + 3 x 4 =
   B. 15 x \(\frac{3}{4}\) =
   C. 15 x 3 – 4 =
   D. 15 x \(\frac{4}{3}\) =
   E. 15 + 4 x 3 =