Simplify all answers and show your work!

1. ____________________________ is a shortcut for repeated subtraction.
2. ____________________________ is a shortcut for repeated addition.
3. The denominator of a fraction tells us ____________________________________________________.
4. What is a common denominator for $\frac{3}{15} + \frac{7}{20}$? ___________
5. Fill in the blank: $\frac{5}{8} = \frac{\underline{\quad}}{56}$
6. In order to add or subtract fractions/mixed numbers, they must have a common ________________.
7. Draw a picture that represents $3\frac{1}{4}$.
8. Write $8\frac{1}{12}$ as an improper fraction.
9. Write $\frac{53}{6}$ as a mixed number.
10. Find the prime factorization of 50.
11. Write $\frac{42}{54}$ in lowest terms. (Show your work!)
12. Add: $\frac{5}{12} + \frac{11}{12}$
13. Subtract: $\frac{13}{18} - \frac{7}{18}$
14. Add: $\frac{5}{12} + \frac{11}{20}$
15. Subtract: $\frac{3}{4}$
16. Find all factors of 42.
17. Determine whether the two fractions are equivalent or not equivalent. Justify your answer. $\frac{10}{24}$ and $\frac{15}{36}$
18. What is the least common multiple of 12, 18, and 21? (In other words, if you had a problem like \( \frac{1}{12} + \frac{1}{18} + \frac{1}{21} \), what would be the least common denominator?)

19. Karen is making fruit salads for a catering job, and she has all of the ingredients except for apples and oranges. A bag of apples weighs 15 pounds, and a bag of oranges weighs 9 pounds. If Karen needs to buy 7 bags of apples and 4 bags of oranges for her salads, how many pounds of fruit does she need to buy?

20. A pharmacy technician has to split 256 mL of a liquid medication into vials holding 8 mL each. How many vials can be filled with the 256 mL he has on hand?

21. Each credit hour at Augusta Technical College costs $36. During Spring quarter Joseph is taking MAT 1012, which is 5 credit hours, and SCT 100, which is 3 credit hours. In addition to tuition, there are fees of $20, $26, $4, and $35 each quarter. How much does Joseph pay total Spring quarter?

22. In 2006, the average gasoline consumption for that year for a passenger car was about 552 gallons. How many gallons per month were consumed in 2006 by the average passenger car?

23. Lance received a $100 bonus at work. He spent $22 at the movie theater and $36 for dinner that evening. How much money does Lance have left from his bonus?

24. Rod can get 24 miles per gallon in his SUV. How many miles can he go on 15 gallons?