Simplify all answers and show your work!

1. _______________________ is a shortcut for repeated addition.

2. The numerator of a fraction tells us ____________________________________________________.

3. What is a common denominator for \( \frac{2}{9} + \frac{1}{12} \) ? ___________

4. Fill in the blank: \( \frac{3}{8} = \frac{\underline{40}}{40} \)

5. _______________________ is a shortcut for repeated subtraction.

6. In order to add or subtract fractions/mixed numbers, they must have a common ________________.

7. Draw a picture that represents \( \frac{3}{4} \)

8. Write \( \frac{6}{7} \) as an improper fraction.

9. Write \( \frac{49}{8} \) as a mixed number.

10. Find the prime factorization of 24.

11. Find **all** factors of 20.

12. Write \( \frac{24}{56} \) in lowest terms.

13. **Add**: \( \frac{5}{24} + \frac{11}{24} \)

14. **Subtract**: \( \frac{13}{15} - \frac{8}{15} \)

15. **Add**: \( \frac{5}{6} + \frac{7}{8} \)

16. **Subtract**: \( \frac{5}{9} - \frac{5}{36} \)

17. **Add**: \( \frac{3}{12} + \frac{4}{9} \)

18. **Subtract**: \( -6\frac{1}{4} \)

19. **Subtract**: \( 8\frac{1}{8} - 5\frac{1}{2} \)
20. Determine whether the two fractions are equivalent or not equivalent. Justify your answer. \[ \frac{12}{28} = \frac{28}{63} \]

21. What is the least common multiple of 15, 20, and 24? (In other words, if you had a problem like \[ \frac{1}{15} + \frac{1}{20} + \frac{1}{24} \], what would be the least common denominator?)

22. José can drive 330 miles on 15 gallons of gasoline in his truck. How many miles per gallon does his truck get?

23. Your bill for a doctor’s appointment costs $60, the blood work costs $120, and an X-ray costs $75. If your insurance covers all of it except $30, how much is your insurance paying?

24. A small dishwasher uses about 12 gallons of water per wash. How much water will it use in seven days if used twice a day?

25. If a Firestone retail outlet can store 270 tires on 15 shelves, how many tires can be stored on each shelf?

26. Hallie Josey has a piece of yarn that is 186 feet long. She wants to cut the yarn into 9-foot pieces for an experiment in her classroom.
   a) How many pieces of yarn at exactly 9 feet long can she cut? 
   b) How much yarn will she have left over?