Simplify all answers and show your work!

1. Multiplication is a shortcut for repeated __________________________.

2. Division is a shortcut for repeated __________________________.

3. The denominator of a fraction tells us _____________________________.

4. What is a common denominator for \(\frac{5}{7} + \frac{2}{5}\)? __________

5. Fill in the blank: \(\frac{3}{8} = \frac{\underline{\hspace{2cm}}}{40}\)

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

7. To multiply or divide mixed numbers, it’s best to first change them into ______________________________ before trying to multiply or divide.

8. Draw a picture that represents \(2\frac{1}{3}\).

9. Write \(9\frac{3}{8}\) as an improper fraction.

10. Write \(\frac{67}{9}\) as a mixed number.

11. Find the prime factorization of 72.

12. Write \(\frac{45}{63}\) in lowest terms. (Show your work!)

13. Add: \(\frac{6}{15} + \frac{4}{15}\)

14. Subtract: \(\frac{21}{25} - \frac{6}{25}\)

15. Add: \(\frac{1}{4} + \frac{13}{16}\)

16. Add: \(\frac{2}{15} + \frac{7}{12} + \frac{11}{15}\)

17. Subtract: \(\frac{7}{3} - \frac{2}{5}\)

18. Subtract: \(\frac{10}{6} - \frac{3}{8}\)

19. Multiply: \(\frac{3}{5} \cdot \frac{3}{14}\)
20. **Multiply:** \( \frac{12}{35} \cdot \frac{5}{8} \)

21. **Divide:** \( 12 \frac{3}{4} \div 1 \frac{7}{8} \)

22. Mike’s Auto Shop recycles used oil from oil changes at the shop. Mike discovered that one gallon of oil weighs 7 pounds, and his shop has collected two 55-gallon drums worth of oil. What is the total weight of the oil that Mike’s Auto Shop has collected?

23. Casey has 152 CDs that he needs to place on his new CD rack. He discovers that each shelf in his CD rack will hold 12 CDs.
   a) How many shelves will be full when he puts his CDs on the CD rack?
   b) How many CDs will there be left over to go on a remaining shelf?

24. Shanté has $2464 in her checking account. She pays bills that cost $265, $723, and $550. How much money is left in her checking account after all of the bills are paid?

25. A shop orders 15 drills that cost $65 each and 8 welding shields that cost $600 each. Shipping on the items costs $50. How much is the total cost of the order?