Arithmetic review. Please complete the following problems on a separate sheet of paper without a calculator, showing all work. This is a requirement for passing and must be handed in the second week of class.

Simplify the following fractions by reducing to lowest terms. Show the work as in the following example:

\[
\frac{24}{60} = \frac{2^3 \times 3}{2^2 \times 3 \times 5} = \frac{2}{5}
\]

1. \[\frac{98}{84}\]
2. \[\frac{20}{100}\]
3. \[\frac{297}{495}\]

Multiply the following fractions. Reduce to lowest terms, showing all work as above.

4. \[\frac{15}{14} \times \frac{21}{10}\]
5. \[\frac{121}{18} \times \frac{9}{66}\]
6. \[\frac{98}{495} \times \frac{3}{14}\]

Divide the following fractions. Reduce to lowest terms, again showing all the work.

7. \[\frac{12}{121} \div \frac{6}{11}\]
8. \[\frac{64}{55} \div \frac{20}{125}\]
9. \[\frac{297}{84} \div \frac{495}{98}\]

Add (or subtract) the following fractions, and then reduce if possible. Show the work as follows:

\[
\frac{5}{8} + 7 = \frac{5}{8} + \frac{56}{8} = \frac{51}{8}
\]

10. \[\frac{3}{2} + 5\]
11. \[10 - \frac{7}{3}\]
12. \[\frac{8}{9} - 7\]

Find the Least Common Multiple for the following pairs of numbers, showing the work as follows:

\[
24 = 2^3 \times 3, 100 = 2^2 \times 5^2
\]

\[\Rightarrow LCM(24, 100) = 2^3 \times 3 \times 5^2 = 600\]

13. \(LCM(11, 7)\)
14. \(LCM(12, 8)\)
15. \(LCM(20, 100)\)
16. \(LCM(98, 84)\)
17. \(LCM(297, 495)\)

Add (or subtract) the following fractions.

18. \[\frac{11}{7} - \frac{7}{11}\]
19. \[\frac{5}{12} - \frac{1}{8}\]
20. \[\frac{7}{20} - \frac{9}{100}\]
21. \[\frac{5}{98} + \frac{7}{84}\]
22. \[\frac{5}{297} + \frac{4}{495}\]