Arithmetic Review Name: _____

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

1. Reduce the following fractions to lowest terms. First factor each integer as the product of primes. Show the work as in the following example:
$$\frac{24}{60} = \frac{2^3 \times 3}{2^2 \times 3 \times 5} = \frac{2}{5}$$

   (a) $\frac{98}{84}$

   (b) $\frac{20}{100}$

   (c) $\frac{297}{495}$

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

   (a) $\frac{15}{14} \times \frac{21}{10}$

   (b) $\frac{121}{18} \times \frac{9}{66}$

   (c) $\frac{98}{495} \times \frac{3}{14}$

3. Divide the following fractions. Reduce to lowest terms.

   (a) $\frac{12}{121} \div \frac{6}{11}$

   (b) $\frac{64}{55} \div \frac{20}{125}$

   (c) $\frac{297}{84} \div \frac{495}{98}$

4. Find the least common mulitple for the following pairs of numbers, showing the work as follows:
   $24 = 2^3 \times 3, 100 = 2^2 \times 5^2 \Rightarrow LCM(24, 100) = 2^3 \times 3 \times 5^2 = 600$

   (a) $LCM(12, 8)$

   (b) $LCM(11, 7)$

   (c) $LCM(20, 100)$

   (d) $LCM(98, 84)$

   (e) $LCM(297, 495)$

5. Add or subtract the following:

   (a) $\frac{5}{12} - \frac{1}{8}$

   (b) $\frac{11}{7} - \frac{7}{11}$

   (c) $\frac{7}{20} - \frac{9}{100}$

   (d) $\frac{5}{98} + \frac{7}{84}$

   (e) $\frac{5}{297} + \frac{4}{495}$