

Math5900 Midterm 2 Review

Note: You can bring a 4 x 6 inch card of notes for the exam, but no calculators allowed!

1. Simplify these expressions.

(a) $1\frac{2}{7} \div \frac{3}{8}$

(b) $2^5 2^{-3} 2^0$

(c) $\frac{1}{5} \cdot \frac{15}{4} \div 1\frac{1}{3}$

(d) $\frac{5^{-3}}{4^{-2}} \cdot \frac{7}{2}$

(e) $\frac{2}{3} \left(\frac{5}{4} \right) + \frac{7}{8}$

2. Find the GCF and LCM of the following pairs of numbers, using two different methods for each answer. (You can leave your answers in factored form, if you'd like.)

(a) 135, 1155

(b) 134, 890

(c) 234, 455

3. Explain why 0^0 is undefined and why any nonzero number raised to the zero power is one.

4. A family uses 5 gallons of milk every 3 weeks. At that rate, how many gallons of milk will they need to purchase in a year's time?

5. One fourth of the world's population is Chinese and one fifth of the rest is Indian. What percent of the world's population is Indian?

6. Perform the following arithmetic operations. **For each problem, use TWO different methods to show your work.** (For example, you can use the chip abacus, base blocks, number line, etc.) (Note: Make sure you can do both partitive and measurement methods for division.)

(a) $16 - 21$

(b) $\frac{3}{7} + \frac{2}{5}$

(c) $\frac{7}{9} \div \frac{2}{3}$

(d) $234 \div 9$

(e) 643×78

(f) $-4 + 8$

(g) $\frac{3}{5} \cdot \frac{1}{4}$

(h) -7×-3

(i) $155 + 87$

(j) $321 - 69$

7. A recipe calls for $1\frac{1}{5}$ cups of sugar. You find that you only have $\frac{3}{4}$ of a cup of sugar left in your cupboard. What fraction of the recipe can you make? (Assume that you don't run next door to borrow more sugar from your neighbor. :))

8. Gideon won the lottery. He spent $\frac{1}{20}$ of the money on a new car, $\frac{2}{5}$ of his winnings on a new home, $\frac{1}{6}$ of his money on travel, and then he gave $\frac{1}{10}$ of his winnings to charity. That left him with \$340,000 to put into savings. What was the total amount of his cash prize?