

Review Math 130 Final Exam Fall 2010

For the final, you should review your homework problems, the two midterms, journal problems, problems on worksheets, and the activities done in class. Two problems on the final exam will be taken from the midterms and the activities done in class (one of each).

The following problems have been collected from previous final exams. They are mostly from the last part of the course. If you want problems from the first 2/3 of the course, please review the problems that were given for practice for the 2 midterms.

1. For any negative number x , two of the following will be equivalent. Show which ones and briefly explain why.

$$|x| \qquad -x \qquad x$$

2. Write in decimal form:

$$7 \times 10 + 3 \times 1 + 5 \times \left(\frac{1}{10}\right)^2 + 18 \times \left(\frac{1}{10}\right)^5$$

3. Write $0.\overline{189}$ as a simplified fraction.
4. Imagine you are going to write $\frac{11}{21}$ as a decimal. Will the decimal representation terminate, repeat, or continue infinitely? Can you determine this without completing long division? Explain.
5. The ratio of Abby's money to Peter's money was 5:6. After Abby gave \$800 to charity, the ratio became 1:2. How much does Peter have?
6. Holly used 30% of a bag of flour to make cakes. She used 40% of the remainder to make pizza. What percent of the bag did she use altogether?

7. There are 600 students in a school. 60% of the students are male. How many percent more males than females are there?
8. There are 20% more books than magazines in a box. There are 54 more books than magazines. What is the total number of books and magazines in the box?
9. It takes one corn mill six minutes to grind a 50 pound bag of corn. A slower mill can grind the same size bag in nine minutes. If both mills are working at the same time, how long will it take to grind 1500 pounds?
10. 12 is 9% of
11. A farmer took $\frac{3}{4}$ hour to plow $\frac{2}{5}$ of his field. At this rate, how many hours will be needed to plow the entire field?
12. Using divisibility tests discussed in class, find a divisibility test for 20. Prove that your test is true.
13. Explain why the fraction $\frac{n}{7}$ where n is some integer and n is not a multiple of 7, must have a repeating, non-terminating decimal expansion.
14. Taylor and Sonja both earned the same amount of money in 2006. Taylor got a 25% raise in 2007 and a 20% raise in 2008. Sonja got a 20% raise in 2007 and a 25% raise in 2008. How do their salaries compare after the two raises?

15. What is the smallest decimal number you can make that has non-zero digits only in the one-tenths and one-hundredths places? What is the largest decimal number you can make that has non-zero digits only in the one-hundredth's and one-thousandth's places? Draw very rough picture of bundles objects to compare these two numbers? Which is larger? How can you see this?
16. Josh claims that the following are the same: $0.124 \div 0.03$, $1.24 \div 0.3$, $12.4 \div 3$, and $124 \div 30$. Is he right or not? Why? Carry out the $124 \div 30$ up to the one-thousandth's place.
17. Explain how you can use the result of 235×18 to calculate 2.35×0.18 . Calculate 2.35×0.18 .
18. (a) Write a story problem whose answer is $5 \times (-3)$.
(b) Suppose you do not know that $(-5) \times 3 = -15$. Use the fact that $3 \times 5 = 15$ to show that $(-5) \times 3 = -15$.
19. Write a story problem whose answer is $\frac{1}{3} \times \frac{2}{7} + \frac{1}{2} \times \frac{3}{7}$ and solve it.
20. Describe the following pattern using a percent.

2, 8, 32, 128, 512, ...