

Math 201 Exam 2 Fall 2009 NAME:

No Calculators! Show all your work!

1. (20 pts) (a) Express the fraction $\frac{9}{14}$ in decimal form. Show all your work.

Solution: $.642857\overline{1}$

- (b) Write $2.\overline{32}$ as fractions. Show all your work.

Solution: $\frac{230}{99}$

2. (20 pts) Perform the operation and express the answer in simplest form:

(a) $\frac{13}{55} - \frac{6}{35} =$ *Solution:* $\frac{5}{77}$ (b) $\frac{22}{27} \div \frac{55}{36} =$ *Solution:* $\frac{8}{15}$

3. (10 pts) (a) Find a fraction between $\frac{16}{29}$ and $\frac{17}{29}$. *Solution:* $\frac{161}{290}$ or $\frac{33}{58}$

- (b) Find a decimal between 1.234765 and $1.234\overline{765}$. *Solution:* 1.2347651

4. (10 pts) Write a word problem for the division $16\frac{1}{4} \div 1\frac{5}{8}$ and solve it. Please answer in a complete English sentence.

Solution: A cake recipe calls for $1\frac{5}{8}$ cups of sugar. How many cakes can you bake with $16\frac{1}{4}$ cups of sugar. Answer: 10

5. (15 pts) Write out an explanation, with sketches, to answer the following: Three-fourths of the class were girls. One third of the girls have dark hair. What fraction of the class is female and dark haired? Please answer in a complete English sentence.

Solution: $\frac{1}{4}$

6. (10 pts) Peter, Paul and Mary shared a large Pizza at the Mellow Fungus. Peter ate half as much as Mary and Paul ate three fourth of what Mary ate. The total bill came to \$13.50. How much should each of them pay to make it fair? Please answer in a complete English sentence.

Solution: \$3.00, \$4.50, \$6.00

7. (15 pts) In Nerdsville four out of every five adult residents have a college degree. The ratio of residents with a college degree in engineering to those with college degrees in other subjects is three to five.

- (a) What is the ratio of adult residents of Nerdsville with college degree to those without college degree? *Solution:* 4 : 1

- (b) What fraction of the adult population with college degree majored in engineering? *Solution:* $\frac{3}{8}$

- (c) What fraction of the adult population of Nerdsville has a college degree in engineering? *Solution:* $\frac{3}{10}$

8. (10 pts) Use drawings of chips in two colors to explain $5 - - 2 = 7$