Math for Elementary School Teachers I
MATH 320
Exam 3
Spring 1994

Name _____

(6) 1. (a) Convert $\frac{4}{7}$ to a repeating decimal.

(6) (b) Convert $.29\overline{385}$ to a fraction.

(4) 2. (a) What is an irrational number?

(4) (b) Give an example of an irrational number other than $\sqrt{2}$.

(6) (c) Write $.0234$ in scientific notation.

(6) 3. Write .2347 in expanded place-value notation.

(6) 4. (a) What percent of 25 is 12?

(6) (b) What is 32% of 75?

(6) (c) Sales tax is at a rate of 6%. If groceries, with sales tax, cost \$103.88, how much did the groceries cost without the sales tax?

5. Name the property of $\mathbb{R}$ illustrated by each of the following:

(6) (a) $x + (y + z \cdot w) = (x + y) + z \cdot w$

(6) (b) $0 + x \cdot y = x \cdot y$

(6) (c) $(x + y) \cdot (z + w) = (z + w) \cdot (x + y)$

(6) 6. State the definition of addition for whole numbers.

(6) 7. State the definition of $\cup$ (set union) for sets.

(6) 8. (a) Fill in the blank:

$$a - b = a + \underline{\hspace{3cm}}$$

(6) (b) Fill in the blank:

$$a \div b = a \cdot \underline{\hspace{3cm}} \qquad (b \neq 0)$$

(8) 9. Graph the following numbers on a number line:

$$\frac{-2}{3}, \frac{-3}{4}, \frac{1}{2}, .231, \frac{3}{13}$$

(10) EXTRA CREDIT: Prove that $\sqrt{2}$ is irrational.