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

(6) (b) Convert $0.29385$ 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 $0.0234$ in scientific notation.
3. Write 0.2347 in expanded place-value notation.

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

(b) What is 32% of 75?

(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:

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

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

(c) $(x + y) \cdot (z + w) = (z + w) \cdot (x + y)$
6. State the definition of addition for whole numbers.

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

8. (a) Fill in the blank:

$$a - b = a + \underline{\phantom{0}}$$

(b) Fill in the blank:

$$a \div b = a \cdot \underline{\phantom{0}} \quad (b \neq 0)$$

9. Graph the following numbers on a number line:

$$-2, -\frac{3}{4}, \frac{5}{3}, 1.231, \frac{3}{13}$$
(10) EXTRA CREDIT: Prove that $\sqrt{2}$ is irrational.