

NAME: _____ DATE: _____

Quiz#1: REAL NUMBERS: Show me what you know!!

1. Choose all the correct answers from the multiple choices.
Which of the following is a rational number?

- a) 1.5
- b) $\frac{1}{3}$
- c) π
- d) $-8.3535353535353535\dots = -8.\overline{35}$
- e) 5.12345678910.....

$\frac{p}{q} \quad q \neq 0$
 decimal \rightarrow terminating
 repeating

2. Calculate the following: $1500 + \aleph_0$

- a) \aleph_0
- b. A finite number
- c. An uncountable infinity

3. Fill in the chart below, stating the period and length for each rational number.

Rational Number	Decimal Form	Percent
$-\frac{1}{3}$	$-0.\overline{3}$	$-33.\overline{3}\%$
$\frac{14}{100} = \frac{7}{50}$	0.14	14%
$\frac{245}{100} = \frac{49}{20}$	2.45	245%

4. Convert to Scientific Notation:

a) $85473200856 = 8.5473200856 \times 10^{10}$
 b) $0.00000342 = 3.42 \times 10^{-6}$

5. Write the full number from the scientific notation:

a) $3.21 \times 10^{-5} = 0.0000321$
 b) $8.05 \times 10^3 = 8050$

6. Simplify each expression. Express in lowest terms and show your work.

$$\begin{aligned} \text{a) } & \frac{-2}{3} \left(\frac{-4}{9} + \frac{8}{9} \right) \\ & = \frac{-2}{3} \times \frac{4}{9} \\ & = \frac{-8}{27} \end{aligned}$$

Keep-Switch-Flip.

$$\begin{aligned} \text{b) } & \frac{-11}{5} \left(\frac{-6}{5} \div \frac{3}{1} \right) \\ & = \frac{-11}{5} \left(\frac{-6}{5} \times \frac{1}{3} \right) \\ & = \frac{-11}{5} \times \frac{-2}{5} \\ & = \frac{22}{25} \end{aligned}$$

$$\begin{aligned} \text{c) } & -12.2 - \underline{\underline{26.6 \div 0.2}} \\ & = -12.2 - 133 \\ & = -145.2 \end{aligned}$$

$$\begin{aligned} \text{d) } & \left(\frac{-2}{3} \right)^2 + \frac{5}{9} \\ & = \frac{4}{9} + \frac{5}{9} \\ & = \frac{9}{9} \\ & = 1 \end{aligned}$$