Math 206 - Quiz 2

January 25, 2012

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) Write $5.6\overline{2}$ as a ratio of two integers. Write your final answer in lowest terms.

$F = 5.6\overline{2} \Rightarrow$ $100F = 562.\overline{2}$, $10F = 56.\overline{2}$, $90F = 506$, $F = \frac{506}{90} = \boxed{\frac{253}{45}}$

2. (1 point) Without using your calculator, write $\frac{7}{20}$ in decimal form.

$\frac{7}{20} \cdot \frac{5}{5} = \frac{35}{100} = \boxed{0.35}$

3. (1 point) Suppose $\frac{b}{11}$ is a proper fraction in lowest terms. Without using your calculator, explain why the decimal form of $\frac{b}{11}$ cannot be $0.\overline{5639112758329}$.

THE REPETEND OF $b/11$ MUST HAVE 10 OR FEWER DIGITS.

THE GIVEN DECIMAL NUMBER HAS A 13-DIGIT REPETEND.

4. (1 point) Without using your calculator, determine whether each fraction can be represented by a terminating decimal or a repeating decimal. Tell how you know.

(a) $\frac{6}{3 \cdot 5^2 \cdot 2^7} = \frac{2}{5^2 \cdot 2^7} = \frac{1}{5^2 \cdot 2^6}$

↑ ONLY 2's AND/OR 5's $\Rightarrow$ TERMINATING DECIMAL

(b) $\frac{19}{80} = \frac{19}{2^4 \cdot 5}$

↑ ONLY 2's AND/OR 5's $\Rightarrow$ TERMINATING DECIMAL