

4. [6 pts] Find a decimal number that satisfies all of the following clues:
- The digit in the hundreds position is one more than that in the 10^{-1} position.
 - The digit in the tenths position equals that in the 10^0 position.
 - There are no digits in the hundredths position or smaller.
 - The ones digit is odd.
 - Rounded to the nearest ten, the number equals 700.
5. [5 pts] Find a rational number that is between $\frac{2}{3}$ and 0.667.
6. (a) [2 pts] Perform the following division entirely by hand: $0.07 \div 3.5$
- (b) [4 pts] Verbally explain how you positioned the decimal point in the quotient, and why.
7. [5 pts] Without counting, use place value to explain what the right-most position in the product 1.234×0.56789 must be.

8. [10 pts] Arrange the numbers below in decreasing order. Indicate any ties. Show work.

$$0.\overline{78}, \quad 0.7\overline{8}, \quad \frac{7}{8}, \quad 0.787787778\dots, \quad 0.788$$

9. [5 pts] Make up an example of an irrational number, telling how you know.

10. [5 pts] The fraction $22/7$ creates a repeating decimal. Without performing the actual conversion, explain why this is guaranteed to happen. Be clear and articulate!

11. (a) [4 pts] What percent is 93.6 of 40?

(b) [4 pts] 93.6 is 40% of what number?

12. [24 pts - 3, 4, or 6 each] Convert as indicated; if not possible, say so. Show work only as needed.

(a) 4.38% to a single fraction

(b) 6.7868686... to a single fraction

(c) 4.54454445... to a single fraction

(d) $1\frac{3}{8}$ to a percent; do not round

(e) $\frac{21}{27}$ to a decimal; do not round

(f) $6\frac{1}{8}\%$ to a decimal; do not round