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

\[ 0.78, \quad 0.78, \quad \frac{7}{8}, \quad 0.787787778\ldots, \quad 0.788 \]

\[ \text{Biggest: } \frac{7}{8} \]

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

\[ 0.787787778\ldots \]

It neither terminates nor repeats.

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!

The division won't stop, but the remainders (1 through 6) will have to "recycle." That means the answer will start to "recycle," or repeat, also.

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

\[ \frac{\text{93.6}}{40} = \text{93.6}\% \]

\[ 2.34 \]

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

\[ 0.40 \times \_\_\_ = 93.6 \]

\[ 234 \]