Density, Limits, and Infinity

**Number**

**Unit 1 Line Master 2a**

1. How many numbers are there between $\frac{1}{5}$ and $\frac{2}{5}$? Explain your answer.

2. a) Consider the set of even numbers between 0 and 100.
What is the density of this set?

 b) Consider the set of real numbers between 0 and 100.
What is the density of this set?

 c) Which set is more dense? Explain.

3. Write the limit of each sequence.

 a) 8.9, 8.99, 8.999, … The limit is \_\_\_\_.

 b) 72.05, 72.005, 72.0005, … The limit is \_\_\_\_.

 c) $\frac{1}{3}, \frac{1}{9}, \frac{1}{27}, \frac{1}{81}, …$ The limit is \_\_\_\_.

4. Create a sequence of numbers with a limit of 3. Trade sequences with a classmate,
then confirm or challenge your classmate’s thinking.