

$$0.\overline{123}$$

Figure out the changes from one line to the next:

$$x = 0.\overline{43}$$

$$100x = 43.\overline{43}$$

$$99x = 43$$

$$x = \frac{43}{99}$$

How can this help you figure out $0.\overline{123}$ as a fraction?

$$\frac{\sqrt{3}}{4}$$

What kind of number is $\sqrt{3}$?

What is your definition of a rational number?

Are all fractions rational numbers?

Calculator display:

3.14159265

Does this calculator display show π ?

Why might you say *yes*?

Why might you say *no*?

$$0.\overline{9}$$

Write $\frac{1}{9}$ as a decimal.

Write $\frac{2}{9}$ as a decimal.

What fraction would you consider next?

Continue the pattern.