Use a calculator to work out

$1 \div 9$

$1 \div 99$

$1 \div 999$

Then use those answers to predict the answer to $1 \div 9999$

The decimal representations of $\frac{1}{9}$, $\frac{1}{99}$, $\frac{1}{999}$ and $\frac{1}{9999}$ can be used to help you work out the decimal representations of other families of fractions.

Can you use what you now know to make predictions about the decimal representations of these and other fractions?

- $\frac{1}{3}$, $\frac{1}{33}$, $\frac{1}{333}$, ...

- $\frac{1}{11}$, $\frac{1}{111}$, $\frac{1}{1111}$, ...

- $\frac{23}{99}$, $\frac{37}{99}$, $\frac{52}{99}$, $\frac{n}{99}$, ...

Can you show that the recurring decimals in your predictions are equivalent to the fractions that they are supposed to represent?