

NAME _____ Period _____ SCORE _____/5

Repeating Decimals → Fractions Worksheet

To convert $0.\overline{3}$ into a fraction, follow these steps:

$$\begin{aligned} \text{Let } n &= 0.\overline{3} \\ 10n &= 3.\overline{3} \end{aligned}$$

$$\begin{aligned} \text{So, } 10n &= 3.\overline{3} \\ - n &= -0.\overline{3} \\ \hline 9n &= 3 \\ 9 &\overline{) 3} \\ n &= \left(\frac{1}{3}\right) \end{aligned}$$

To convert $0.\overline{27}$ into a fraction, follow these steps:

$$\begin{aligned} \text{Let } n &= 0.\overline{27} \\ 100n &= 27.\overline{27} \end{aligned}$$

$$\begin{aligned} \text{So, } 100n &= 27.\overline{27} \\ - n &= -0.\overline{27} \\ \hline 99n &= 27 \\ 99 &\overline{) 27} \\ n &= \left(\frac{3}{11}\right) \end{aligned}$$

For #1 - 6, convert each decimal into a fraction.

1. $0.25 = \underline{\hspace{2cm}}$ 2. $0.\overline{5} = \underline{\hspace{2cm}}$ 3. $2.\overline{3} = \underline{\hspace{2cm}}$

4. $4.125 = \underline{\hspace{2cm}}$ 5. $9.\overline{45} = \underline{\hspace{2cm}}$ 6. $0.4\overline{5} = \underline{\hspace{2cm}}$

7. Some people say that $\pi = \frac{22}{7}$. Without using the values of these numbers, explain why this statement is not true.
