Warm-up



2. a)

$\frac{1}{27}$

$$
\begin{array}{r}
0.037\overline{037} \\
27\overline{)1.000000} \\
-\ 81\downarrow \\
\hline
\ 190 \\
-189\downarrow \\
\hline
\ 100
\end{array}
$$

$\frac{2}{27}$

$$
\begin{array}{r}
0.074\overline{074} \\
27\overline{)2.000000} \\
-\ 189\downarrow \\
\hline
\ 110 \\
-\ 108\downarrow \\
\hline
\ 2
\end{array}
$$

$\frac{3}{27}$

$$
\begin{array}{r}
0.1\overline{1} \\
27\overline{)3.00} \\
-\ 27\downarrow \\
\hline
\ 30
\end{array}
$$

0.1 tenth

What is the value of each decimal?

0.01 hundredth

0.001 thousandth

$\frac{1}{10}$ $\frac{1}{100}$ $\frac{1}{1000}$

10 100 1000

tenth hundredth thousandth

what about these fractions???

Any similarities????

SAME VALUE

$\frac{1}{10} = 0.1$ so $\frac{2}{10} = ?$ 0.2

$\frac{5}{100} = 0.05$

$\frac{60}{100} = 0.60$

Equivalent Fractions

Equivalent fractions are fractions that have the same value, even though they look different.

We can create equivalent fractions by multiplying or dividing the numerator and denominator by the same number.

EXAMPLES

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$$

$$\frac{2}{5} = \frac{4}{10} = \frac{6}{15}$$

How Do We Find Equivalent Fractions?

Multiply

$$\frac{2}{5} \overset{\times 6}{=} \frac{12}{30}$$

Why Are Equivalent Fractions Helpful?

Sometimes a fraction is difficult to convert to a decimal.

Instead of using long division, we can find an equivalent fraction with a denominator of **10, 100, or 1000**.

Then we can read the decimal easily!

example

$\frac{22}{50} \times 2 = \frac{44}{100} = 0.44$

$\frac{1}{2} \times 5 = \frac{5}{10} = 0.5$

Let's try these together

1. $\frac{1}{5}$
2. ~~$\frac{4}{5}$~~
3. $\frac{9}{20}$
4. $\frac{1}{4}$
5. $\frac{3}{4}$

$\frac{1}{5} \overset{\times 2}{=} \frac{2}{10} = 0.2$

$\frac{9}{20} \overset{\times 5}{=} \frac{45}{100} = 0.45$

$\frac{3}{4} \overset{\times 25}{=} \frac{75}{100} = 0.75$

Quick Tip

Ask yourself: "Can I make the denominator 10, 100, or 1000?"

If yes, finding an equivalent fraction is often faster than doing long division!

you try

1. $\frac{3}{5}$

2. $\frac{7}{20}$ $\times 5$ $\times 5$ $= \frac{35}{100} = 0.35$

3. $\frac{9}{10} = 0.9$ $=$

$\frac{9}{10}$ $\times 10$ $\times 10$ $= \frac{90}{100} = 0.90$ ✓

Think a little harder....

1. $\frac{7}{25}$ $\times 4$ $\times 4$ $= \frac{28}{100} = 0.28$

Homework