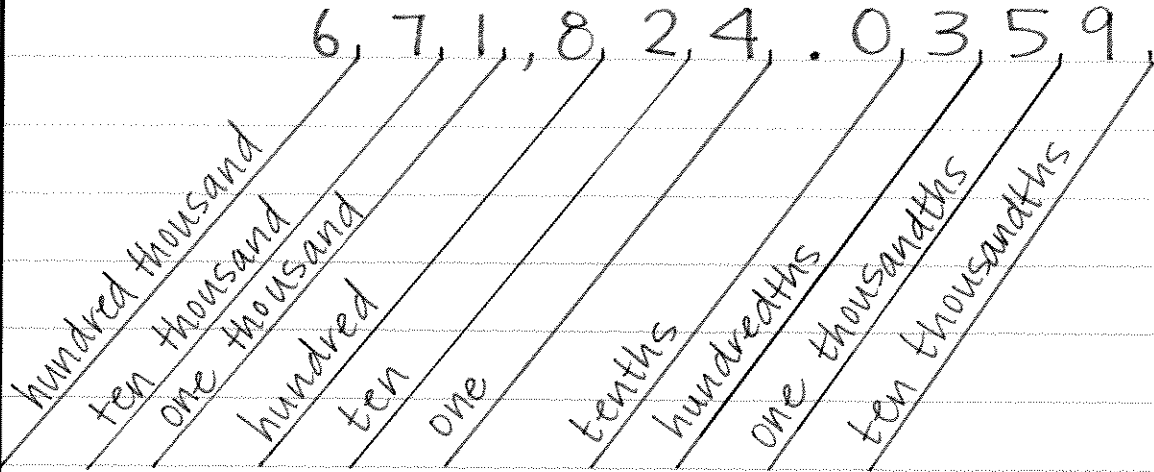


INTRODUCTION TO DECIMALS

Consider the number:



Notice the pattern that keeps repeating. To the left of the decimal point the pattern of one, ten, hundred repeats to the left. To the right of the decimal point the same pattern picks up (starting with the ones place) to the right.

We visualize the ONES place as being in the middle.

↳

EXAMPLE 1 :

0.000 000 002 is said

When reading decimals, we must be aware of what place value we are dealing with.

↳

EXAMPLE 2: Translate each decimal into a word statement:

a) 0.17

b) 0.017

c) 0.00017

↳ example 3: Translate each decimal into a word statement:

a) 3.6

b) 105.02

c) 3.50

d) 0.0200

Remember: A decimal is just another way of writing _____ whose denominators are powers of _____.

↳ example 4: Convert each decimal into a fraction and then reduce to lowest terms:

a) $0.3 =$

$$b) 0.7 =$$

$$c) 0.09 =$$

$$d) 0.60 =$$

$$e) 0.32 =$$

$$f) 0.250 =$$

↳ example 5: convert each fraction into a decimal

$$a) \frac{9}{10} =$$

$$b) \frac{41}{100} =$$

$$c) \frac{3}{1,000} =$$

But what if the fraction's denominator
is NOT a power of 10?

$$d) \frac{3}{4}$$

We must multiply
TOP AND BOTTOM
by _____

$$\frac{3}{4} \cdot \frac{(\quad)}{(\quad)} = \frac{(\quad)}{(\quad)} = \underline{\hspace{2cm}} \quad \uparrow \text{ decimal}$$

We can also use long division:

$$\frac{3}{4} \Rightarrow 4 \overline{)3}$$

↳ example 6:

Change $\frac{1}{8}$ into a decimal

$$\frac{1}{8}$$

Now that we know what $\frac{1}{8}$ is as a decimal, we can figure out the following:

$$\frac{1}{8} =$$

$$\frac{2}{8} =$$

$$\frac{3}{8} =$$

$$\frac{4}{8} =$$

$$\frac{5}{8} =$$

$$\frac{6}{8} =$$

$$\frac{7}{8} =$$

$$\frac{8}{8} =$$

↳ example 7: Write the following
decimals in order
from smallest to
largest:

0.03 0.073 0.007 0.07 0.003 0.037

INTRODUCTION TO DECIMALS

Practice Problems

1. Change each decimal into a reduced fraction:

a) 0.75

b) 0.025

c) 0.0060

2. Change each fraction into a decimal:

a) $\frac{3}{100}$

b) $\frac{1}{2}$

c) $\frac{13}{20}$

3. Put $>$ or $<$ in each box to make a true statement:

a) 0.01 0.001

b) 0.00034 0.00031

c) 0.057 0.0058