Lesson 1 : Decimals and Percents Nov 1st, 2022
(0.5) (50%)
1/2

Converting Decimals to Their Equivalent Fraction Form

→ it's a question of reading!

Recall : $2\frac{1}{4}$ (mixed #)
proper fraction / fractional part

integer
integral part
(to left of decimal)

2.25
(to right of decimal)

→ Reading Decimal Using Their Place Values
(digits)

decimal

1 2 3 4 5 . 6 7 8 9

ones
tens
hundreds
thousands
tenths
hundredths
thousandths

~~oneth~~

Converting Continued.

Convert to mixed #:

34.5

34 and 5 tenths

34 and $\frac{5}{10}$

$34\ \frac{5}{10}$ $\div 5$ $\div 5$

$34\ \frac{1}{2}$

step i. Read the integer, say 'and' @ decimal, and read fractional part w last digit's place value

step ii convert decimal to fraction

step iii: simplify fractional part if possible.

Convert:

10.02

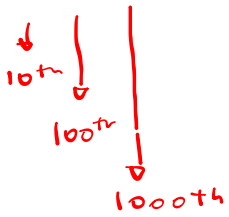
10 and 2 hundredths

10 and $\frac{2}{100}$ $\frac{0}{0}$ $\frac{2}{2}$

$10\frac{1}{50}$

Convert :

12.045 12 point 045



12 and 45 thousandths

$12\frac{45}{1000}$ $\frac{0}{0}$ 5 / $\frac{0}{0}$ 5

$12\frac{9}{200}$

9 — irreducible! so finished!

You do handout #1.

(w denominator of 10 / 100 / 1000)

Convert Fractions to Decimals

ex.

$\frac{7}{100}$

7 hundredth

0.07

ex. $\frac{9}{10}$ 9 tenths

0.9

step 1 : Read and keep in mind place values of decimal

1.234

1 → 10th, 2 → 100th, 4 → 1000th

(not w denominator 10/100/1000)

Convert Fractions to Decimals

$\frac{3}{4} \times \frac{25}{25}$ $\frac{3}{4}$ of 1 $

step i Rewrite as an equivalent fraction w bottom 10/100/1000/10 000 ... etc.

step ii same as before

$\frac{75}{100}$

75 100th

0.075 ×

0.75 75 ¢ 0.75 of 1 $

Convert Fractions to Decimal w/ Long Division

Recall : $\frac{3 \times 2}{5 \times 2} = \frac{6}{10} = 0.6$

the quotient

dividend → 3, divisor → 5 $= 0.6$

$$5\overline{)30} = 0.6$$

$$\begin{array}{r} 30 \\ -\ 30 \\ \hline 0 \end{array}$$

"how many times 5 into 3..."

∴ if answer 0, put decimal

"how many times 5 into 30"

$\frac{1}{8}$

$$8\overline{)10} = 0.125$$

$$\begin{array}{r} 8 \\ \hline 20 \\ -\ 16 \\ \hline 40 \\ -\ 40 \\ \hline 0 \end{array}$$

remainder is zero so stop.

Repeating Decimals and Their Period

Convert to decimal:

$\frac{1}{3}$

$$3\overline{)1.000}\quad 0.333$$

9

10

9

10

9

1

$\frac{1}{3} = 0.3333333\ldots$

$\frac{1}{3} = 0.\dot{3}$

or

$\frac{1}{3} = 0.\overline{3}$

$\frac{1}{3} \neq 0.3 = \frac{3}{10}$ not

How many digits are repeating?

1 ∴ length of period = 1. period = 3

Convert:

$\frac{4}{11}$

$$11\overline{)4.0000}\quad 0.36363\ldots$$

33

70

66

40

$\frac{4}{11} = 0.\overline{36}$ ✓

$\frac{4}{11} = 0.3\overline{6}$ no

2 digits ∴ length of period is 2.

period = 36

Question: There's a sweater that costs $40, but you receive a discount of one quarter of that price. How much money did you pay in total?

Labeling could help!

Total discount price	=	Regular price of item	−	Discount received
($)		($)		(#)

same unit cm² subtracting

∴ WANT: total discount price

∴ TOOL: what equation — TDP = RPI − DR

∴ INFO: check if you have all elements of tool — RPI = 40# DR = ?

(any unknowns in info become new want)

WANT: DR (fraction in respect to total)

TOOL: DR = fraction × RPI

INFO: RPI = 40 fraction = $\frac{1}{4}$

$\frac{3}{4} \times 1$

$\frac{3}{4}$ of #

if have all info start doing math here