

Ch. 12 Decimal Place Value 2/21/24

Thousands 1000	Hundreds 100	Tens 10	Ones 1	Decimal <i>and</i>	Tenths 0.1	Hundredths 0.01	Thousandths 0.001
8	4	6	2	.	7	9	5

$$8462 \frac{795}{1000} = 8462.\underline{7}\underline{9}\underline{5}$$

$$\frac{5}{1000} = .\underline{0}\underline{0}\underline{5}$$

$$\frac{1}{10} = \text{one tenth} = .\underline{1} = 0.1$$

$$\frac{1}{100} = \text{one hundredth} = .\underline{0}\underline{1}$$

Every zero in the denominator
is a place value
behind the decimal!

$$\frac{4}{10} = .\underline{4} = 0.4 = 0.400000$$

$\swarrow$ $\swarrow$
 four tenths $.4 \neq .04$

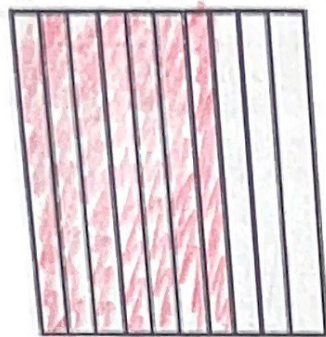
$$\frac{4}{100} = .\underline{0}\underline{4}$$

$$4 \neq 40$$

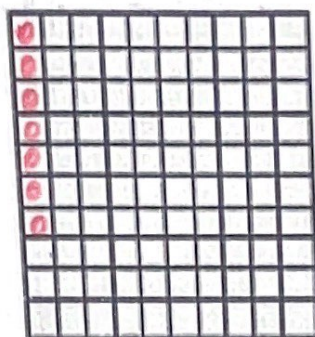
~~$$.4$$~~

Ch. 12 Tenths + Hundredths

tenths



hundredths



$$\frac{1}{10} = \frac{1}{10} \quad \frac{1}{100} = .01$$

$$\frac{1}{10} \times \frac{10}{10} = \frac{10}{100} \times \frac{10}{10} = \frac{1}{10}$$

$$\frac{70}{100} = \frac{70}{100}$$

$$\text{nine hundredths} = \frac{9}{100} = .09$$

$$\text{ninety hundredths} = \frac{90}{100} = .90$$

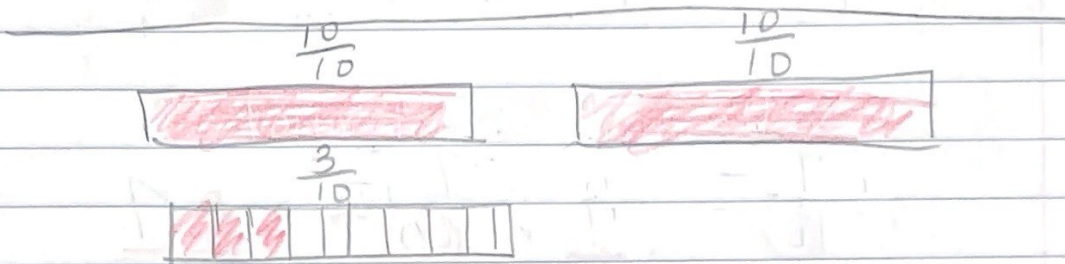
114

five tenths



fraction $\frac{5}{10}$

decimal 0.5



$2\frac{3}{10}$

2.3

f

d

$$\frac{23}{10} = 2\frac{3}{10}$$

Ch. 12 Equivalent Decimals 2/23/24

$$\begin{array}{ccc} \cancel{.3} & = & \cancel{.30} = \cancel{.300} \\ \text{tenths} & & \text{hundredths} \quad \text{thousandths} \end{array}$$

$$\frac{3 \times 10}{10 \times 10} = \frac{\boxed{30} \times 10}{100 \times 10} = \frac{\boxed{300}}{1000}$$

$$\frac{3}{10} = \frac{\cancel{30}}{\cancel{100}} = \frac{\cancel{300}}{\cancel{1000}}$$

$$\begin{array}{ccccccc} \cancel{.4} & = & \cancel{\frac{4}{10}} & = & \frac{\cancel{40}}{100} & = & \frac{\cancel{.40}}{} \\ & & & & \text{hundredths} & & \text{hundredths} \end{array}$$

$$\frac{8}{10} = \frac{\cancel{.80}}{\cancel{0.80}}$$

decimal in hundredths

$$\cancel{\$} \frac{1 \times 20}{5 \times 20} = \frac{\boxed{20}}{\boxed{100}} = \$0.20$$

$$\frac{1 \times 50}{2 \times 50} = \frac{50}{100} = \$0.50$$

$$\frac{1}{10} = \frac{10}{100}, \quad \frac{10}{100}$$

Hun

$$\frac{90}{100} = \frac{9}{10}, \quad \frac{9}{10}$$

tenths

Ch. 12 Money

2/26/24

$$\$1 = \$1.00 = 1.00 = \frac{100}{100} = \frac{1}{1} = 1$$

$$\$0.25 = 0.\textcircled{25} = \frac{25}{100} \div \frac{25}{25} = \boxed{\frac{1}{4}}$$

$\$0.25$ or 25¢

~~.25¢~~

$$\frac{1}{5} = \frac{20}{100} = \$0.\underline{20}$$

penny : $\$0.01 = \frac{1}{100}$ of a dollar

nickel : $\$0.05 = \frac{5}{100} \div \frac{5}{5} = \frac{1}{20}$ of a dollar

dime : $\$0.10 = \frac{10}{100} \div \frac{10}{10} = \frac{1}{10}$ of a dollar

quarter : $\$0.25 = \frac{25}{100} \div \frac{25}{25} = \frac{1}{4}$ of a dollar

120

2/27/24 Ch. 12 Uncommon Denominators

$$\frac{3}{100} + \frac{30}{100} = \frac{33}{100} = 0.33$$

$$\frac{160}{100} + \frac{16}{100} = \frac{176}{100} = 1.76$$

$$\frac{3}{100} + \frac{90}{100} = \frac{93}{100} = 0.93$$

$$\frac{90}{100} + \frac{23}{100} = \frac{113}{100} = 1.13$$

$$\frac{40}{100} + \frac{40}{100} = \frac{80}{100}$$

$$\frac{8}{10} = \frac{80}{100}$$

$$\frac{4}{10} + \frac{40}{100} = \frac{8}{10}$$

$$\frac{4}{5}$$

$$0.9 + 0.23 = 1.13$$

$$\begin{array}{r} \textcircled{1} \\ 0.90 \\ + 0.23 \\ \hline 1.13 \end{array}$$

$$0.14 + .8 = \frac{0.94}{d} \quad \frac{\frac{94}{100}}{f}$$

$$\begin{array}{r} 0.14 \\ + 0.80 \\ \hline .94 \end{array}$$

$$\begin{array}{r} 0.80 \\ + 0.14 \\ \hline \end{array}$$

$$.09 + 1.08 = \frac{1.17}{d} \quad \frac{1\frac{17}{100}}{f}$$

$$\begin{array}{r} \textcircled{1} \\ .09 \\ 1.08 \\ \hline 1.17 \end{array}$$

122

2/20/24 Ch. 12 Order and Compare Decimals

$$\cancel{0.3499} < \cancel{0.4200}$$

$$\frac{3499}{10,000}$$

$$\frac{4200}{10,000}$$

$$\cancel{0.94} > \cancel{0.9} \quad \cancel{.8} > \cancel{.0999}$$

$$\cancel{0.04} < \cancel{0.4} \quad \cancel{0.99} < \cancel{1} \quad \cancel{0.2} > \cancel{0.1999}$$

L to G

$$\cancel{1.19}$$

②

$$\cancel{1.2}$$

③

$$\cancel{1.09}$$

①

$$1.09 < 1.19 < 1.2$$

$$\cancel{1.089}$$

②

$$\cancel{1.1}$$

③

$$\cancel{1.999}$$

④

$$\cancel{1.07999}$$

①

L to G~~4.01~~
(2)~~4.1~~
(3)~~4.001~~
(1)~~4.2~~
(4)~~1.9~~
(2)~~0.99~~
(3)~~1.09~~
(1)~~1.00~~
(4)~~0.4~~
(3)~~0.10~~
(2)~~0.9~~
(4)~~0.08~~
(1)