
Unit 4 Decimals and Percents

Lesson 4.1: Day 46 Ordering Decimals

Objectives

To compare one decimal to another decimal and determine which is larger

To place decimals on a numberline

To change fractions like $\frac{3}{10}$, $\frac{75}{100}$, and $\frac{4}{1000}$ to decimals

To round decimals to the nearest tenth or hundredth

Vocabulary

decimal numbers, or decimals – numbers written in decimal notation, used to denote whole numbers and parts of whole numbers

fractions – numbers that are part of a whole

number line – a line with equally spaced marks on which the number to the right is the greater number and the number to the left is the smaller number.

round a number - To replace a number by another one of approximately the same value that is easier to use.

Daily Quiz /

Yesterday's Homework

Problem of the Day

Arrange from the least to the greatest:

\$1.25 \$2.50 \$.75 \$100 \$25.20

Answer:

\$.75 \$1.25 \$2.50 \$25.20 \$100

Review:

New: To find numbers corresponding to points on a **number line**

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Teaching Example 1:

Objectives

To change fractions like

$$\frac{9}{10}, \frac{75}{100} \text{ and } \frac{6}{1000} \text{ to decimals}$$

To round off decimals to the nearest tenth or hundredth

Review

Read $\frac{5}{10}$ as 5 tenths

Read $\frac{7}{100}$ as 7 hundredths

Read $\frac{95}{1000}$ as 95 thousandths

We can use decimals to represent fractions.

$$\begin{array}{l} \text{2 tenths} \\ \frac{2}{10} \text{ or } 0.2 \end{array}$$

$$\begin{array}{l} \text{25 hundredths} \\ \frac{25}{100} \text{ or } 0.25 \end{array}$$

$$\begin{array}{l} \text{256 thousandths} \\ \frac{256}{1000} \text{ or } 0.256 \end{array}$$

one 0 one decimal
place

two 0's two decimal
places

three 0's three decimal
places

Example 1

Change $\frac{4}{100}$ to a decimal

Write 4.

4.

0.04 move the decimal point 2 places to the left.

$$\text{So, } \frac{4}{100} = 0.04$$

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Example 2 Change $\frac{66}{1000}$ to a decimal.

Write 66. 66.
 0.066 Move the decimal point 3 places to the left.
 So, $\frac{66}{1000} = 0.066$.

Teaching Example 3

Round 0.6312 to the nearest tenth.

Look at the hundredths digit. 0.6312
 ^
 The hundredths digit is less tenths Since the digit to the right of
 than 5; round down. place the tenths place is less than
 5, round 0.6312 to 0.6.
 So, 0.6312 is 0.6 to the nearest tenth.

Example 4

Round 0.786 to the nearest hundredth

Look at the thousandths digit. 0.786
 ^
 The thousandths digit is greater hundredths Since the digit to the right of
 than 5; round up. place the hundredths place is more
 than 5, round 0.786 to 0.79.
 So, 0.786 is 0.79 to the nearest hundredth.

Example 5

Round 0.3459 to the nearest hundredth.

Look at the thousandths digit. 0.3459
 ^
 The thousandths digit is 5; round hundredths Since the digit to the right of
 up. place the hundredths place is 5,
 round 0.3459 to 0.35.
 So, 0.3459 is 0.35 to the nearest hundredth.

Example 6

Round to the nearest tenth.

Look at the hundredths digit. 48.32, 48.35, and 48.37
 ^ ^ ^
 If the hundredths digit is 5 or tenths less 5 or 5 or
 greater, round up. place than 5 more more
 48.3 48.4 48.4
 So, 48.32 is 48.3 to the nearest tenth, 48.35 is
 48.4 to the nearest tenth, and 48.37 is 48.4 to
 the nearest tenth.

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Lesson 4.2: Day 47 Changing forms: Fractions to Decimals, rounding

Objectives

To change fractions to decimals

To change a fraction like $\frac{5}{12}$ to a decimal to the nearest hundredth

Vocabulary

denominator - The number or expression below the fraction bar in a fraction. 4 is the denominator of $\frac{x}{4}$.

numerator - The number or expression above the fraction bar in a fraction. x is the numerator of $\frac{x}{4}$.

Daily Quiz / Yesterday's Homework

Objectives

To change fractions to decimals

To change a fraction like $\frac{5}{12}$ to a decimal to the nearest hundredth

Problem of the Day

Evaluate $\frac{15}{5}$

$\frac{15}{5}$ means 15 divided by 5:

$$\begin{array}{r} 3 \\ 5 \overline{)15} \\ \underline{15} \\ 0 \end{array}$$

Method for rounding decimals to a place value to the right of a decimal point

Step 1

Locate the digit to the right of the given place value.

Step 2

If this digit is 5 or greater, add 1 to the digit in the given place value and drop all digits to its right. If this digit is less than 5, drop all digits to the right of the given place value.

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Example 1

Change $\frac{2}{5}$ to a decimal.

Divide. $\frac{2}{5}$ means $5 \overline{)2} = 5 \overline{)2.0}$

Write a 0 after the decimal point, since 20 is divisible by 5.

$$\begin{array}{r} 0.4 \\ \rightarrow 5 \overline{)2.0} \\ \underline{20} \\ 0 \end{array}$$

So, $\frac{2}{5} = 0.4$.

Example 2

Change $\frac{3}{8}$ to a decimal.

$\frac{3}{8}$ means 8 into 3.

Write one 0. Write two 0's. Write three 0's.

Divide.

$$\underline{0.3}$$

$$\underline{0.37}$$

$$\underline{0.375}$$

Write enough 0's after the decimal point so that the remainder will be 0.

$$8 \overline{)3.0}$$

$$\begin{array}{r} 8 \overline{)3.00} \\ \underline{24} \\ 6 \end{array}$$

$$\begin{array}{r} 8 \overline{)3.000} \\ \underline{24} \\ 60 \end{array}$$

$$\begin{array}{r} \underline{24} \\ 60 \end{array}$$

remainder $\xrightarrow{\quad}$ 4

$$\underline{56}$$

$$\underline{56}$$

$$40$$

$$\underline{40}$$

remainder $\xrightarrow{\quad}$ 0

So, $\frac{3}{8} = 0.375$.

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Example 3

Change $\frac{3}{7}$ to a decimal to the nearest tenth.

$$\begin{array}{r} \underline{3} \text{ means } 7 \overline{) 3.00} \end{array}$$

Divide:

To find the answer to the nearest tenth, carry the division to hundredths.

$$\begin{array}{r} \underline{0.42} \\ 7 \overline{) 3.00} \\ \underline{28} \\ 20 \\ \underline{14} \\ 6 \end{array}$$

0.42
| less than 5
Round to 0.4

0.42 rounded to the nearest tenth is 0.4
So, $\frac{3}{7} = 0.4$ to the nearest tenth

Example 4

Change $\frac{5}{12}$ to a decimal to the nearest hundredth.

$$\begin{array}{r} \underline{5} \text{ means } 12 \text{ into } 5 \\ 12 \end{array}$$

Divide: To find the answer to the nearest hundredth, carry the division to the thousandths.

$$\begin{array}{r} \underline{0.416} \\ 12 \overline{) 5.000} \\ \underline{48} \\ 20 \\ \underline{12} \\ 80 \\ \underline{72} \\ 8 \end{array}$$

0.416
| 5 or more
Round to 0.42

0.416 rounded to the nearest hundredth is 0.42
So, $\frac{5}{12} = 0.42$ to the nearest hundredth.