Mixed Numbers as Decimals

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101.0 Mixed Numbers as Decimals

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[Figure 1]

Kara is making curtains for her room. She has a total of $6\frac{4}{5}$ yards of fabric to work with. Each curtain needs to be 3.45 yards and she is making 2 curtains. Will she have enough fabric for both?

In this concept, you will learn to convert mixed numbers to decimals.

Converting Mixed Numbers to Decimals

You can convert fractions to decimals using two methods. One method involves using fractions with base ten denominators and place values. Another method involves division. These methods can also be use to convert mixed numbers to decimal numbers.

Here is a mixed number.

$$5\frac{3}{10}$$

You can also think of a mixed number as the sum of a whole number and a fraction.

$$5 + \frac{3}{10}$$

To find the decimal value of a mixed number, convert the fraction to a decimal number and add the whole number to the decimal value of the fraction. Remember that the whole number in a fraction has the same value as a whole number in a decimal number. Whole numbers are placed on the left side of the decimal point.

The fraction $\frac{3}{10}$ is 3 tenths. Place the whole number, 5, to the left of the decimal point and the 3 in the tenths place.

$$5\frac{3}{10} = 5.3$$

Here is another mixed number.

$$8\frac{1}{5}$$

First, find the decimal value of $\frac{1}{5}$. Divide 1 by 5 to get the decimal part of the number.

$$\begin{array}{r} 0.2 \\ 5\overline{)1.0} \\ \underline{-\ 1.0} \\ 0 \end{array}$$

Then, place the whole number to the left of the decimal point.

$$8\frac{1}{5} = 8.2$$

The decimal value of $8\frac{1}{5}$ is 8.2.

Examples

Example 1

Earlier, you were given a problem about Kara and her curtains.

Kara wants to make 2 curtains that are 3.45 yards each and has $6\frac{4}{5}$ yards of fabric. Convert the mixed number to see if she will have enough.

First, convert the fraction part into a decimal.

$$\frac{4}{5} = 0.8$$

Then, place the whole number to the left of the decimal point.

$$6\frac{4}{5} = 6.8$$

Next, find the total amount she needs.

$$3.45 \times 2 = 6.9$$

Kara will not have enough fabric and will be short 0.1 yards of fabric.

Example 2

Write the following mixed number as a decimal.

$$16\frac{3}{4}$$

First, convert the fraction part into a decimal. Divide or find an equivalent fraction with the denominator as a base ten value.

$$\frac{3}{4} = \frac{75}{100} = 0.75$$

Then, place the whole number to the left of the decimal point.

$$16\frac{3}{4} = 16.75$$

The decimal value of $16\frac{3}{4}$ is 16.75.

Example 3

Write the mixed number as a decimal.

$$6\frac{13}{100}$$

First, convert the fraction part into a decimal. $\frac{13}{100}$ is 13 hundredths.

$$\frac{13}{100} = 0.13$$

Then, place the whole number to the left of the decimal point.

$$6\frac{13}{100} = 6.13$$

The decimal value of $6\frac{13}{100}$ is 6.13.

Example 4

Write the mixed number as a decimal.

$$15\frac{9}{10}$$

First, convert the fraction part into a decimal. $\frac{9}{10}$ is 9 tenths.

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

Then, place the whole number to the left of the decimal point.

The decimal value of $15\frac{9}{10}$ is 15.9.

Example 5

Write the mixed number as a decimal.

$$6\frac{1}{4}$$

First, convert the fraction part into a decimal.

$$\begin{array}{r} 0.25 \\ 4\overline{)1.00} \\ \underline{-8} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

Then, place the whole number to the left of the decimal point.

$$6\frac{1}{4} = 6.25$$

The decimal value of $6\frac{1}{4}$ is 6.25.

Review

Write each mixed number as a decimal.

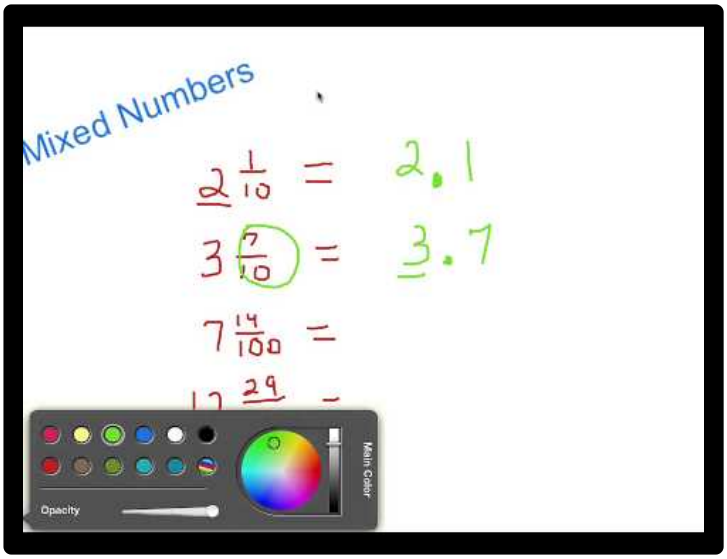
1. $4\frac{1}{10}$
2. $6\frac{8}{10}$

3. $14\frac{6}{100}$
4. $7\frac{18}{100}$
5. $12\frac{9}{10}$
6. $24\frac{11}{100}$
7. $8\frac{19}{100}$
8. $5\frac{10}{20}$
9. $4\frac{1}{2}$
10. $7\frac{1}{3}$
11. $5\frac{2}{10}$
12. $9\frac{1}{8}$
13. $10\frac{2}{100}$
14. $46\frac{1}{4}$
15. $65\frac{4}{5}$

Review (Answers)

To see the answer key for this book, go to the Table of Contents and click on the Answer Key under the 'Other Versions' option.

Resources



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