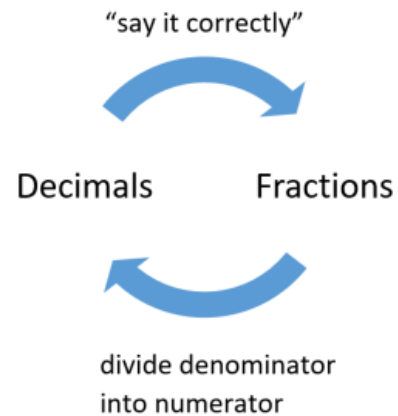


Fractions, Decimals and Percentages

Objective 1: Convert between Fractions and Decimals

Fractions and decimals are just two different ways of writing the same numbers.

- When we see 0.7, most people say “zero point seven”. The correct way to say the number is seven tenths. Close your eyes. What do you picture when you say seven tenths? Say a decimal number the technically correct way then you can easily convert it to fractional form.
4.1 is four and one tenth or $4\frac{1}{10}$
0.36 is thirty-six hundredths or $\frac{36}{100}$
- To change fractions into decimals, divide the denominator into the numerator (yes, the “bottom” into the “top”).



Example: Fill in the following chart converting between fraction and decimal numbers.

Fractional Form	Decimal Form
$\frac{4}{5}$	
$4\frac{2}{3}$	
	5.2
	0.85

Questions

1. Write $4\frac{3}{4}$ as a decimal number.

2. Write $\frac{2}{3}$ as a decimal number.

3. Write 0.2 as a fraction.

4. Write 5.33 as a mixed number.

Objective 2: Conversion between Decimals or Fractions and Percentages

The word “percent” means parts of 100.

This means that percent can be considered to be a fraction with a denominator of 100.

Example: Write 53% as a fraction and as a decimal.

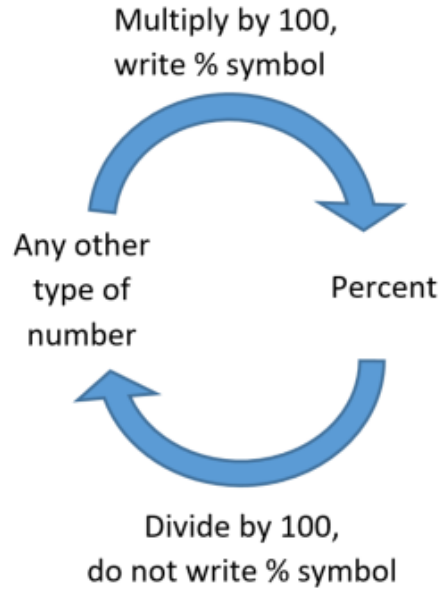
When the denominator of a fraction is 100, it is simple to change between the forms.

Fraction	Decimal	Percent
$\frac{3}{100}$		
	0.67	
		49%
		100%

We know that the following are equivalent. How do we convert between Fractions, Decimals and Percentages?

$$53\% = \frac{53}{100} = 0.53$$

To change from a fraction or decimal into a percent we multiply by 100 and put on the % symbol.



To change from percent into either a fraction or a decimal we divide by 100 and leave off the % symbol.

Example: Change 4.2 into a fraction and a percent.

Example: Change $\frac{1}{3}$ into a decimal and a percent.

Example: Change 0.7% into a decimal and a fraction.

Questions

1. Write 4.2 as a percent.

2. Write 6.7% as a decimal.

3. Write 20% as a fraction.

4. Write $\frac{3}{4}$ as a percent.

Objective 3: Percent Equation

50 is 50% of 100

Example: What is 25% of 400?

Here are some of the common percentages that would be good to know as fractions.

Percent	Fraction
10%	$\frac{10}{100} = \frac{1}{10}$
20%	$\frac{20}{100} = \frac{1}{5}$
25%	$\frac{25}{100} = \frac{1}{4}$
$33\frac{1}{3}\%$ Often we just approximate 33% as $\frac{1}{3}$. Be careful with this approximation, but note that it is widely used.	$\frac{33\frac{1}{3}}{100} = \frac{1}{3}$
50%	$\frac{1}{2}$
$66\frac{2}{3}\%$ Often, we just approximate 67% as $\frac{2}{3}$ Be careful with this approximation but note that it is widely used.	$\frac{66\frac{2}{3}}{100} = \frac{2}{3}$
75%	$\frac{3}{4}$
100%	1

Example: What is 33% of \$6000?

Example: What is 21% of 400?

Example: What is 75% of \$400?

Example: What is 142% of 5000?

Questions

1. What is 20% of 700?

2. What is 25% of 4000?

3. What is 33% of 900?

4. What is 75% of 160?

Objective 4: Estimating Percentages

It is often helpful to be able to estimate percentages. This is common when figuring out a tip.

Example: Estimate a 15% gratuity for a bill of \$31.70.

b. What will your new salary be?

Example: All employees at Fly High Airlines are now getting a 2% raise. Your salary is \$25,000 per year.

a. How much of a raise will you get?

b. What will your new salary be?

Questions

Solve the following problems.

1. The flight attendants at Come Fly with Me Airlines are all getting a 3% raise. Your salary is \$32,000 per year. What will your new salary be?

2. To save the company from going bankrupt, all employees at Crash and Burn airlines are being asked to take a 5% pay cut. Jasper's salary is \$42,000 per year. What will his new salary be?