

Conversions between fractions and decimals

Remember: A fraction is just division. So...

- To convert a fraction to a decimal, just divide.
- To convert a decimal to a fraction: if the number has k decimals, remove the decimals in the number and write it over 10^k . Then simplify the fraction if necessary.

Examples: $\frac{4}{5} = 0.8$. $\frac{23}{3} = 7.\bar{6}$

Examples: $5.63 = \frac{563}{100}$. $0.36852 = \frac{36852}{10000} = \frac{18426}{5000}$.

Exercises: Write the following fractions as decimals.

1. $\frac{34}{5} =$

2. $\frac{15}{1000} =$

3. $\frac{45}{21} =$

4. $\frac{363}{55} =$

5. $\frac{15}{10} =$

6. $\frac{485}{100} =$

Exercises: Write the following decimals as fractions.

7. $3.56 =$

8. $16.3 =$

9. $0.0004 =$

10. $14.5006 =$

11. $1655 =$

12. $56.0004 =$

13. $333.56 =$

14. $1.3 =$

15. $0.0708 =$

Percents and conversions

Remember: The symbol '%' is read 'percent'. It means 'per hundred' or 'out of a hundred'. Thus, for example,

$$45\% = \frac{45}{100} = 0.45.$$

A number can be written in three ways: as a decimal, as a fraction, and as a percent. How do we convert a number from one way to another?

- To convert from percents to decimals, just think that '%' means 'divided by 100', so divide the number by 100 (which amounts to moving the decimal point two steps to the left) and remove the '%' sign.
- To convert from percents to fractions, write the number over 100 and, if the numerator has decimals, move the decimal point to the right in **both** the numerator and the denominator until the numerator has no decimals. Then simplify the fraction if necessary.
- To convert from decimals to percents, do the opposite process: multiply the number by 100 and put a '%' sign after the number.
- To convert from fractions to percents, convert the fraction to a decimal first and then convert the decimal to a percent.

Examples: $31\% = \frac{31}{100} = 0.32$. $4.53\% = \frac{4.53}{100} = \frac{453}{10000} = 0.0453$. $345.351\% = \frac{345.351}{100} = \frac{345351}{100000} = 34.5354$

Exercises: Complete the following table of conversions.

Percent	Fraction	Decimal
25%	$\frac{25}{100} = \frac{1}{4}$	0.25
37%		
75%	$\frac{7}{10}$	

Percent	Fraction	Decimal
		0.042
		356.75
2356.4%		
	$\frac{1}{3}$	
55%		
		0.02
		16.342
246%		
		0.2356

Fractional parts of numbers

Remember: When we say, for example, ‘one-half of 60’, we mean ‘ $\frac{1}{2} \times 60$ ’. Likewise, for example, ‘40% of 30’ means ‘ $40\% \times 30$ ’.

For example, 40% of $30 = 0.4 \times 30 = 12$. For example, $\frac{2}{3}$ of $60 = \frac{2}{3} \times 60 = \frac{120}{3} = 40$.

Exercises: Find (the first one is the example):

- 16.** 12% of 45 = $0.12 \times 45 = 3.20$ **17.** 22% of 12 = **18.** 13% of 16 =
19. 35% of 13 = **20.** 11% of 11 = **21.** 135% of 25 =
22. 0.2% of 31 = **23.** 5.1% of 10 = **24.** 4.01% of 22 =
- 25.** Harold bought cupcakes for his sister’s birthday party. 20% of the 35 cupcakes had sprinkles on top. How many cupcakes had sprinkles?
- 26.** Trisha’s Cafe has regular coffee and decaffeinated coffee. This morning, the cafe served 10 coffees in all, 70% of which were regular. How many regular coffees did the cafe serve?
- 27.** Joan went to her local zoo where 58.6% of it’s exhibits featured monkeys. If the zoo features 29 exhibits in total, then how many of the zoo’s exhibits feature monkeys?
- 28.** At a construction job for a mansion there are 50 painters. Of these painters, 76.0% of them paint the interior of the mansion. How many painters are painting the interior?
- 29.** Sally decided to look at new and used vans. Sally found a new van for \$47000. Typically a used van goes for 74.5% of a new van, so what price would a used van be? Round your answer to the nearest whole number if necessary