



This activity is about converting between fractions, decimals and percentages.

Information sheet

Converting between decimals and fractions

To change a decimal to a fraction: use the place value of the last digit

For example

$$0.85 = \frac{85}{100} = \frac{17}{20}$$

Diagram illustrating the conversion of 0.85 to a fraction. An arrow points from the decimal 0.85 to the fraction $\frac{85}{100}$, with the label "hundredths" below it. Two blue curved arrows show the simplification process: one from 85 to 17 labeled $\div 5$, and another from 100 to 20 labeled $\div 5$.

On a calculator press: $85 \ a^{b/c} \ 100 =$

To change a fraction to a decimal: divide the top by the bottom

For example $\frac{4}{5} = 4 \div 5 = 0.8$

Converting between percentages and fractions or decimals

To write a % as a fraction or decimal: divide by 100

For example $64\% = 64 \div 100 = 0.64$

or $64\% = \frac{64}{100} = \frac{16}{25}$

On a calculator press: $64 \ a^{b/c} \ 100 =$

To write a decimal or fraction as a %: multiply by 100

For example $0.125 = 0.125 \times 100 = 12.5\%$

$$\frac{2}{5} = \frac{2}{5} \times 100 \text{ (i.e. } \frac{2}{5} \text{ of } 100\%) = 40\%$$

or $\frac{2}{5} = 2 \div 5 \times 100 = 40\%$

On a calculator press: $2 \ a^{b/c} \ 5 \times 100 = 40\%$

Try these

1 Write these decimals as fractions:

$0.3 = \dots\dots\dots$ $0.5 = \dots\dots\dots$ $0.6 = \dots\dots\dots$ $0.02 = \dots\dots\dots$

$0.05 = \dots\dots\dots$ $0.25 = \dots\dots\dots$ $0.36 = \dots\dots\dots$ $0.125 = \dots\dots\dots$

2 Write these fractions as decimals:

$\frac{7}{10} = \dots\dots\dots$ $\frac{1}{5} = \dots\dots\dots$ $\frac{2}{5} = \dots\dots\dots$ $\frac{3}{4} = \dots\dots\dots$

$\frac{7}{8} = \dots\dots\dots$ $\frac{2}{3} = \dots\dots\dots$ $\frac{9}{20} = \dots\dots\dots$ $\frac{7}{25} = \dots\dots\dots$

3 Write these percentages as decimals:

$3\% = \dots\dots\dots$ $30\% = \dots\dots\dots$ $25\% = \dots\dots\dots$ $80\% = \dots\dots\dots$

$8\% = \dots\dots\dots$ $12\% = \dots\dots\dots$ $67\% = \dots\dots\dots$ $17.5\% = \dots\dots\dots$

4 Write these percentages as fractions:

20% =

75% =

5% =

30% =

40% =

15% =

24% =

35% =

5 Write these decimals as percentages:

0.25 =

0.5 =

0.7 =

0.07 =

0.45 =

0.09 =

0.4 =

0.375 =

6 Write these fractions as percentages:

$\frac{1}{10}$ =

$\frac{1}{5}$ =

$\frac{9}{10}$ =

$\frac{3}{4}$ =

$\frac{4}{5}$ =

$\frac{17}{20}$ =

$\frac{1}{3}$ =

$\frac{2}{3}$ =

At the end of the activity

Explain how to convert ...

- a decimal to a fraction
- a fraction to a decimal
- a percentage to a fraction or decimal
- a fraction or decimal to a percentage.

Give some examples of real contexts where ...

- decimals are used
- fractions are used
- percentages are used.



Fractions to decimals to percentages

Complete this table.

Fraction	Decimal	Percentage
$\frac{1}{10}$		
$\frac{1}{5}$		
$\frac{3}{10}$		
$\frac{2}{5}$		
$\frac{1}{2}$		
$\frac{3}{5}$		
$\frac{7}{10}$		
$\frac{4}{5}$		
$\frac{9}{10}$		
$\frac{1}{4}$		
$\frac{3}{4}$		

Fill the gaps in the table.

Percentage	Fraction	Decimal
10%		
		0.2
	$\frac{3}{10}$	
40%		
		0.5
	$\frac{3}{5}$	
70%		
		0.8
	$\frac{9}{10}$	
25%		
	$\frac{3}{4}$	

I am 100%	Who is $\frac{1}{2}$?	I am 50%	Who is $\frac{1}{5}$?	I am 20%	Who is $\frac{3}{4}$?
I am 75%	Who is $\frac{1}{10}$?	I am 10%	Who is $\frac{1}{4}$?	I am 25%	Who is $\frac{3}{10}$?
I am 30%	Who is $\frac{2}{5}$?	I am 40%	Who is $\frac{7}{10}$?	I am 70%	Who is $\frac{4}{5}$?
I am 80%	Who is $\frac{3}{5}$?	I am 60%	Who is $\frac{9}{10}$?	I am 90%	Who is 1?

I am 100%	Who is $\frac{1}{2}$?	I am 50%	Who is $\frac{1}{5}$?	I am 20%	Who is $\frac{3}{4}$?
I am 75%	Who is $\frac{1}{10}$?	I am 10%	Who is $\frac{1}{4}$?	I am 25%	Who is $\frac{3}{10}$?
I am 30%	Who is $\frac{2}{5}$?	I am 40%	Who is $\frac{7}{10}$?	I am 70%	Who is $\frac{4}{5}$?
I am 80%	Who is $\frac{3}{5}$?	I am 60%	Who is $\frac{9}{10}$?	I am 90%	Who is $\frac{11}{20}$?
I am 55%	Who is $\frac{3}{50}$?	I am 6%	Who is $\frac{1}{3}$?	I am $33\frac{1}{3}\%$	Who is $\frac{14}{25}$?
I am 56%	Who is $\frac{5}{8}$?	I am $62\frac{1}{2}\%$	Who is $\frac{19}{20}$?	I am 95%	Who is $\frac{37}{50}$?
I am 74%	Who is $\frac{3}{8}$?	I am $37\frac{1}{2}\%$	Who is $\frac{2}{25}$?	I am 8%	Who is $\frac{7}{20}$?

I am 35%	Who is $\frac{2}{3}$?	I am $66\frac{2}{3}\%$	Who is $\frac{1}{8}$?	I am $12\frac{1}{2}\%$	Who is $\frac{11}{50}$?
I am 22%	Who is $\frac{1}{20}$?	I am 5%	Who is $\frac{18}{25}$?	I am 72%	Who is $\frac{7}{8}$?
I am $87\frac{1}{2}\%$	Who is $\frac{1}{25}$?	I am 4%	Who is $\frac{17}{50}$?	I am 34%	Who is $\frac{21}{50}$?
I am 42%	Who is $\frac{13}{25}$?	I am 52%	Who is $\frac{9}{20}$?	I am 45%	Who is $\frac{29}{50}$?
I am 58%	Who is $\frac{16}{25}$?	I am 64%	Who is $\frac{8}{25}$?	I am 32%	Who is $\frac{1}{50}$?
I am 2%	Who is $\frac{23}{25}$?	I am 92%	Who is $\frac{49}{50}$?	I am 98%	Who is $\frac{11}{25}$?
I am 44%	Who is $\frac{41}{50}$?	I am 82%	Who is $\frac{13}{20}$?	I am 65%	Who is $\frac{7}{50}$?

I am 14%	Who is $\frac{22}{25}$?	I am 88%	Who is $\frac{31}{50}$?	I am 62%	Who is $\frac{17}{20}$?
I am 85%	Who is $\frac{4}{25}$?	I am 16%	Who is $\frac{23}{50}$?	I am 46%	Who is $\frac{21}{25}$?
I am 84%	Who is $\frac{39}{50}$?	I am 78%	Who is $\frac{3}{20}$?	I am 15%	Who is $\frac{13}{50}$?
I am 26%	Who is $\frac{6}{25}$?	I am 24%	Who is $\frac{43}{50}$?	I am 86%	Who is $\frac{19}{25}$?
I am 76%	Who is $\frac{3}{25}$?	I am 12%	Who is $\frac{9}{50}$?	I am 18%	Who is $\frac{9}{25}$?
I am 36%	Who is $\frac{27}{50}$?	I am 54%	Who is $\frac{17}{25}$?	I am 68%	Who is 1?

I am 1	Who is 50%?	I am $\frac{1}{2}$	Who is 20%?	I am $\frac{1}{5}$	Who is 75%?
I am $\frac{3}{4}$	Who is 10%?	I am $\frac{1}{10}$	Who is 25% ?	I am $\frac{1}{4}$	Who is 30%?
I am $\frac{3}{10}$	Who is 40%?	I am $\frac{2}{5}$	Who is 70%?	I am $\frac{7}{10}$	Who is 80%?
I am $\frac{4}{5}$	Who is 60%?	I am $\frac{3}{5}$	Who is 90%?	I am $\frac{9}{10}$	Who is 100%?

I am 1	Who is 50%?	I am $\frac{1}{2}$	Who is 20%?	I am $\frac{1}{5}$	Who is 75%?
I am $\frac{3}{4}$	Who is 10%?	I am $\frac{1}{10}$	Who is 25%?	I am $\frac{1}{4}$	Who is 30%?
I am $\frac{3}{10}$	Who is 40%?	I am $\frac{2}{5}$	Who is 70%?	I am $\frac{7}{10}$	Who is 80%?
I am $\frac{4}{5}$	Who is 60%?	I am $\frac{3}{5}$	Who is 90%?	I am $\frac{9}{10}$	Who is 55%?
I am $\frac{11}{20}$	Who is 6%?	I am $\frac{3}{50}$	Who is 33%?	I am $\frac{33}{100}$	Who is 56%?
I am $\frac{14}{25}$	Who is 63%?	I am $\frac{63}{100}$	Who is 95%?	I am $\frac{19}{20}$	Who is 74%?
I am $\frac{37}{50}$	Who is 37%?	I am $\frac{37}{100}$	Who is 8%?	I am $\frac{2}{25}$	Who is 35%?

I am $\frac{7}{20}$	Who is 67%?	I am $\frac{67}{100}$	Who is 13%?	I am $\frac{13}{100}$	Who is 22%?
I am $\frac{11}{50}$	Who is 5%?	I am $\frac{1}{20}$	Who is 72%?	I am $\frac{18}{25}$	Who is 87%?
I am $\frac{87}{100}$	Who is 4%?	I am $\frac{1}{25}$	Who is 34%?	I am $\frac{17}{50}$	Who is 42%?
I am $\frac{21}{50}$	Who is 52%?	I am $\frac{13}{25}$	Who is 45%?	I am $\frac{9}{20}$	Who is 58%?
I am $\frac{29}{50}$	Who is 64%?	I am $\frac{16}{25}$	Who is 32%?	I am $\frac{8}{25}$	Who is 2%?
I am $\frac{1}{50}$	Who is 92%?	I am $\frac{23}{25}$	Who is 98%?	I am $\frac{49}{50}$	Who is 44%?
I am $\frac{11}{25}$	Who is 82%?	I am $\frac{41}{50}$	Who is 65%?	I am $\frac{13}{20}$	Who is 14%?

I am $\frac{7}{50}$	Who is 88%?	I am $\frac{22}{25}$	Who is 62%?	I am $\frac{31}{50}$	Who is 85%?
I am $\frac{17}{20}$	Who is 16%?	I am $\frac{4}{25}$	Who is 46%?	I am $\frac{23}{50}$	Who is 84%?
I am $\frac{21}{25}$	Who is 78%?	I am $\frac{39}{50}$	Who is 15%?	I am $\frac{3}{20}$	Who is 26%?
I am $\frac{13}{50}$	Who is 24%?	I am $\frac{6}{25}$	Who is 86%?	I am $\frac{43}{50}$	Who is 76%?
I am $\frac{19}{25}$	Who is 12%?	I am $\frac{3}{25}$	Who is 18%?	I am $\frac{9}{50}$	Who is 36%?
I am $\frac{9}{25}$	Who is 54%?	I am $\frac{27}{50}$	Who is 68%?	I am $\frac{17}{25}$	Who is 100%?