

fs4u

Calculating with Fractions

‘How To’ Booklet 9

Calculating with Fractions

You will need paper and a pen, a calculator with a fraction button.

By the end of this booklet you should be able to:-

- 1 Compare fractions to see which is the larger or smaller.
- 2 Add and subtract fractions.
- 3 Write one quantity as a fraction of another.

If you don't know anything about fractions, do the booklet on 'Describing situations using Fractions'

Which Fraction is Larger?

Sometimes it is easy. You all know that a half is bigger than a quarter. But do you know which is larger – $\frac{2}{3}$ or $\frac{7}{8}$?

RULE

To compare dissimilar fraction, multiply them like this.

$$\frac{2}{3} \times \frac{8}{8} = \frac{16}{24}$$

So $\frac{2}{3} = \frac{16}{24}$ and $\frac{7}{8} = \frac{21}{24}$ - So this is larger.

Try these:-

Which are the larger of these:-

1	$\frac{7}{8}$ or $\frac{1}{2}$ of a loaf of bread?
2	$\frac{3}{4}$ or $\frac{2}{3}$ of a bag of sweets?
3	$\frac{2}{5}$ or $\frac{3}{10}$ of the price of a pair of trainers?
4	$\frac{6}{9}$ or $\frac{1}{3}$ of a cinema audience?

Check your answers

Adding and Subtracting Fractions

RULE

$\frac{3}{6} + \frac{1}{6} = \frac{4}{6}$ (you only add the top row)

$\frac{3}{8} - \frac{2}{8} = \frac{1}{8}$ (you only subtract the top row)

Here are some problems that need you to use addition and subtraction.

5	At a pop concert, $\frac{1}{12}$ of the audience were under 12, $\frac{1}{4}$ were over 30, what fraction were between 12 and 30 years old?
6	Students at a college travel there in different ways. $\frac{1}{8}$ drive their own car $\frac{1}{8}$ drive their parent's car and $\frac{3}{8}$ walk The rest come by bus What fraction come by bus?
7	An airline has a baggage allowance of 66 pounds. If your case weights $58\frac{1}{2}$ pounds, what weight in presents can you bring home?

If you find this difficult use a fraction calculator.

One quantity as a fraction of another.

RULE

The line in a fraction $\frac{1}{2}$ means 'out of'

3 days out of 7 = $\frac{3}{7}$

20 minutes out of an hour = $\frac{20}{60} = \frac{1}{3}$ (use a fraction calculator for this)

(the two things must be the same, so the hour becomes 60 minutes)

Try These

8	What fraction of £1 (100p) is: -			
	a	50p	b	75p
	c	60p	d	85p
9	What fraction of one hour is: -			
	a	30 mins	b	10 mins
	c	45 mins	d	5 mins
10	In an old people's home a doctor sees 70 of its 100 residents on a daily basis. What fraction is this?			

Self Assessment Test

In a Leisure Centre they have 160 customers every day. This table shows which activities they do.

SQUASH	SNOOKER	BADMINTON	FITNESS ROOM	AEROBIC
$\frac{1}{16}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{3}{8}$	$\frac{1}{4}$

a	Was aerobics or the fitness room the more popular?
b	Was snooker or squash the more popular?
c	What do all the fractions add up to?
d	Out of the 160 customers, 100 pay the full price. What fraction is this?