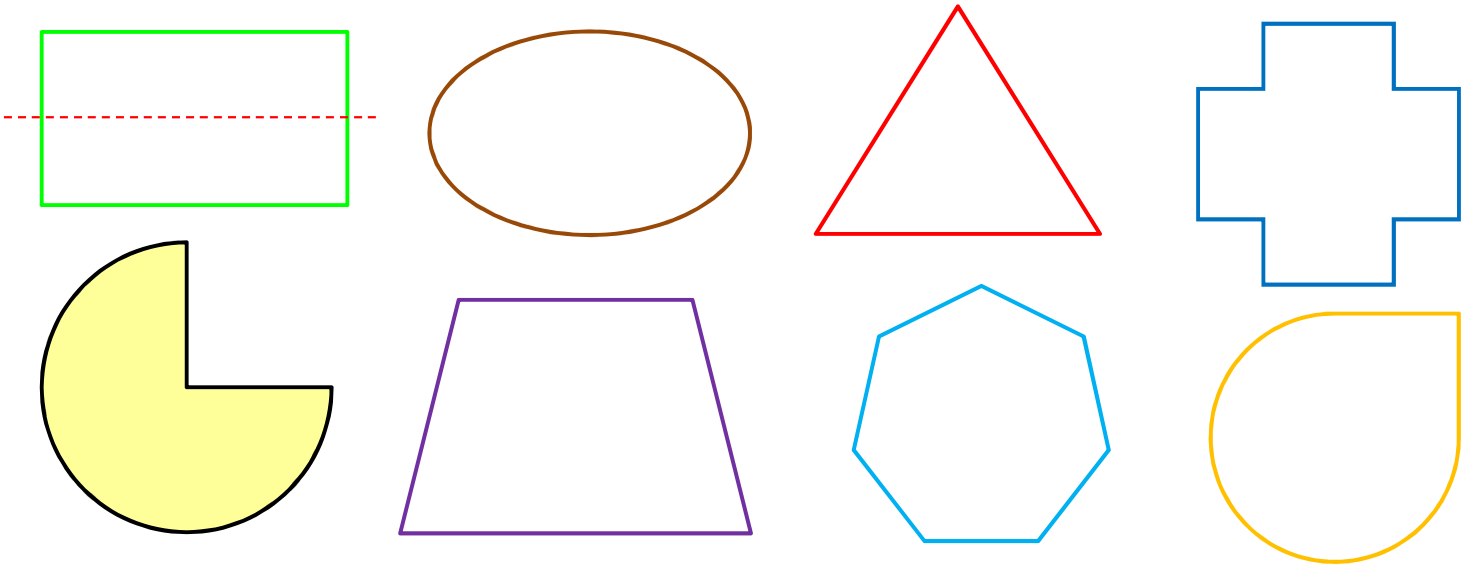
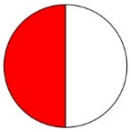
Using halves. *Stg 5 props & rats* Name: _____

Halves, for some reason, are the easiest fraction for folks to get their heads around. If someone asks you to chop a muffin in half to share with your sister/brother – and they choose – you can bet your halving will be microscopically accurate. On that note, have a look at these shapes – Use a ruler to see if you can draw a line through that chops them **exactly** in half. – Both sides must be **equal**. (You might find there is more than one way to chop it up – just choose one)



Let's have a closer look at what a **half** is as a number. It's kind of special in that it has its own name for a start – there's no such thing as 'twoths'! (Although there should be, it sounds awesome).

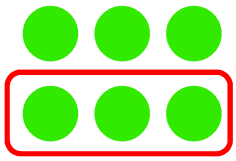


$\frac{1}{2}$ ← The top number (the numerator) tells you it's one part.

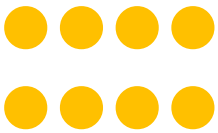
← The bottom bit (the denominator) tells you it's been chopped into 2 parts.

N.B. Halves can be shown as a decimal or a percentage as well: $\frac{1}{2}$ = ÷2 = 0.5 = 50%

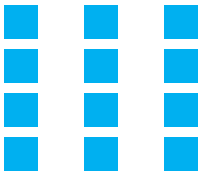
Here's a question though – *can you have halves of numbers or sets?* Well, of course you can! Any <u>even</u> number can easily be halved – try halving some of these cheeky little fellas here:



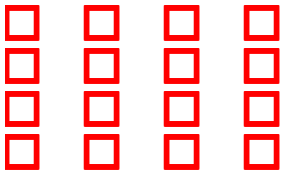
1/2 of 6 = __



1/2 of 8 = __



1/2 of 12 = __



1/2 of 16 = __

OK, this time without pictures: (You can use counters if you get stuck)

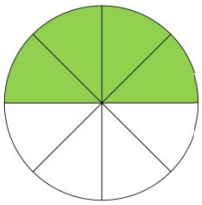
1. 1/2 of 18 = ___
2. 1/2 of 20 = ___
3. 1/2 of 26 = ___
4. 1/2 of 28 = ___
5. 1/2 of 14 = ___
6. 1/2 of 28 = ___
7. 1/2 of 4 = ___
8. 1/2 of 46 = ___
9. 1/2 of 42 = ___

'One half' in Te Reo Māori is 'kotahi haurua'.

Dave Moran 2015

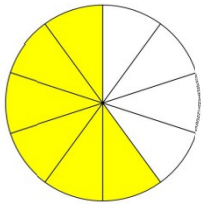
Using halves. *Stg E6 props & rats* Name: _____

The many names of half – when we were chopping numbers in half, a thought may have occurred to you – *if I can say 4 is half of 8 (for example) can I also say that 4/8ths is the same as ½?* How very insightful, you clever thing! Yes, you can say that. These are called '**equivalent fractions'**. See if you can figure out whether these fractions are equivalent to ½ or not: (Tip: odd numbers are tricky to halve)



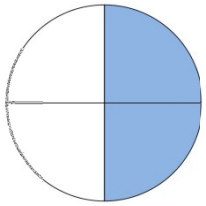
= $\frac{1}{2}$ True False

4 eighths



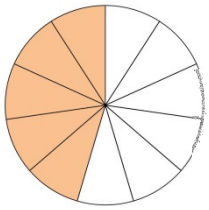
= $\frac{1}{2}$ True False

6 tenths



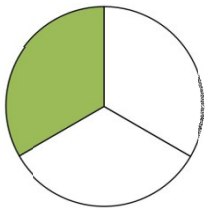
= $\frac{1}{2}$ True False

2 quarters



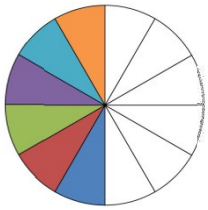
= $\frac{1}{2}$ True False

5 elevenths



= $\frac{1}{2}$ True False

1 third



= $\frac{1}{2}$ True False

6 twelfths

$\frac{7}{14}$ = $\frac{1}{2}$ True False

$\frac{3}{7}$ = $\frac{1}{2}$ True False

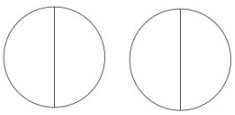
$\frac{12}{24}$ = $\frac{1}{2}$ True False

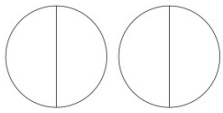
$\frac{9}{18}$ = $\frac{1}{2}$ True False

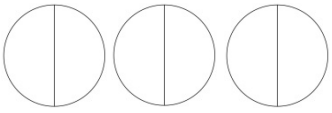
$\frac{50}{100}$ = $\frac{1}{2}$ True False

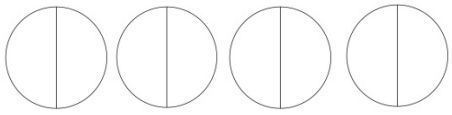
$\frac{9}{19}$ = $\frac{1}{2}$ True False

Here's a thought. *Can you have a fraction that is more than one whole?* You sure can, but naturally, you need another whole. We know 2 halves (2/2) is the whole thing. So what would **3/2** look like? The circles are still chopped into halves, but now there is a whole circle plus another piece.

Shade $\frac{3}{2}$ 

Shade $\frac{4}{2}$ 

Shade $\frac{5}{2}$ 

Shade $\frac{7}{2}$ 

I could also figure out how many halves would be in a mixed fraction.

Say I had **1** and 1/2 pies. How many halves is that? I can see **1**/2, and I know there are **2** halves in the whole pie. So **2 + 1 = 3**. There are **3** halves, or 3/2

a. **2** 1/2 = (4/2 + 1/2) = _____ (Tip: when adding fractions, leave the denominator, just add the tops)

b. **3** 1/2 = (6/2 + 1/2) = _____ (Show your answers as an improper fraction)

c. **5** 1/2 = (10/2 + 1/2) = _____

d. **7** 1/2 = (14/2 + 1/2) = _____

e. **4** 2/2 = (8/2 + 2/2) = _____

Slightly useless fact: In the old days to 'halve' something simply meant to divide it up. Now we use it to talk about splitting something into precisely 2 equal parts

Dave Moran 2015