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| 1/2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 1/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/11 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/12 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/13 | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/13 | | | | | | | | | | | | | | | | | | | | | |
| 1/14 | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1/14 | | | | | | | | | | | | | | | | | | |
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**To get the most out of your Fraction Wall:**

**1. Print several copies of the above sheet onto A3 paper *{print A4 and enlarge to A3 if your printer only prints A4}* for colouring / cutting up.**

**2. If you have the facilities to do it, get one copy enlarged to A2, A1 or A0 and laminate it, then stick it on a wall so that you can colour and wipe off any fractions you are investigating!**

**3. Enjoy experimenting with the following activities, to help improve your understanding of fractions:**

**a) Find *EQUIVALENT*** *{equal value, or equal sized}* **fractions:**

Colour in any fraction you want to investigate, *e.g. 1/2, 1/4, 2/3, 5/8,…*

Now, using a ruler, colour in all the other fractions on the fraction wall that are *EXACTLY* the same size as your first fraction.

*Alternatively,* ***cut out*** *your fraction and move it up and down the wall to find other fractions that are EXACTLY the same size as your first fraction. Then cut out all of your EQUIVALENT fractions and stick them all below each other on a separate piece of paper!*

To finish off your investigation, write down the names of all the *EQUIVALENT* fractions that you have found, *e.g. 1/2 = 2/4 = 3/6 = 4/8 = 5/10 = …*

*Challenge:*

How about trying the same thing with a random fraction from the *middle* of the fraction wall, *e.g. 6/18?*

\*\* You can ***check*** to see if all the fractions you have found actually ***are*** equivalent, using the [Fraction Equivalence exercise](https://BareFacedMaths.co.uk/resources_files/FractionEquivalence.xlsx).

**b) Add fractions by finding a *COMMON DENOMINATOR*** *{i.e. find a type of fraction that two or more other fractions can all be split up into}***:**

Cut out two fractions, *e.g. 1/3 and 2/5*, and hold them together. Now find out a name for the new fraction you have made:

Move your cut out fractions down the wall, until you find the first line of fractions which contains *EXACT* equivalent fractions for *BOTH* of your original fractions.

Stick your original fractions next to each other in a straight line, then stick each one’s equivalent fraction underneath it, *e.g. *

Then write down the fractions and their equivalents, to find the size of the two fractions added together, *e.g.*

**

*Challenges:*

How would you adapt this method for *subtracting* fractions?

What *NUMBER* *RULES* can you find, for adding and subtracting fractions *without* the wall? Can you explain why your rules work?

**c) Multiply fractions by *CUTTING UP*** *e.g. to find 1/2 x 1/3 (read as one half of one third)***:**

Cut out the ***second*** fraction, then ***fold it up and cut off*** the piece specified by the ***first*** fraction *e.g. cut out* ***1/3****, then fold up and cut off* ***1/2*** *of your third.*

Now move this piece down the wall until you find out what size it is. *You will find that your final fraction is the same size as 1/6*. Now write down what you have found, *e.g. 1/2 x 1/3 = 1/6, which reads one half of one third is one sixth!*

*Challenge:*

Try to write down some *RULES* for finding the size of the final fraction. Can you give *REASONS* why these rules work?

**d) Divide fractions by seeing *HOW MANY* there are in the original fraction** *e.g. 1/2 ÷ 1/8 can be read as ‘how many eighths in one half?’***:**

Cut out lots of copies of the ***second*** fraction and see how many of them fit into the first one. Then write down a mathematical statement for what you have found.

**

*And you have found that there are* ***4*** *eighths in one half, so your mathematical statement is:*

**

\*\*Careful - you may end up with pieces of your ***divisor*** to estimate*! e.g. There is one whole quarter and another third of a quarter in one third.*

**

*So you get the mathematical statement:*

*(tricky, eh?)*

*Challenge:*

Try to write down rules for finding the answer to fraction divisions. *Tip:* Think about the relationship between ‘÷ 1/2' and ‘x 2’!

\*\*You can check your rules, to find out if they work, by using the [Fraction Arithmetic exercise](https://BareFacedMaths.co.uk/resources_files/FractionArithmetic.xlsx).

Can you sum up all of your rules for fraction division into ***one*** simple rule, based on ***multiplying*** fractions?