

SMILE WORKCARDS

Fractions Pack Two

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A game for four players.

Smile 2300

This envelope contains:

4 Fraction Bingo Boards
32 Fraction Bingo Cards

Fraction Bingo

- ◆ Shuffle the pack of **Fraction Bingo Cards** and place them face down on the table.
- ◆ Each player has a **Fraction Bingo Board**.
- ◆ A **Fraction Bingo Card** is taken from the top of the pack.
- ◆ If the answer to the **Fraction Bingo Card** is on your board, cover it with the card.
- ◆ The first person to fill their board is the winner.
- ◆ Record the **Fraction Bingo Card** that matched with each number on your **Fraction Bingo Card**.

$\frac{1}{2}$ of 9

That's $9 \div 2 = 4.5$

$\frac{1}{2}$ of 9

48

4.5

$\frac{3}{4}$ of 80

$\frac{1}{4}$ of 80 is 20 so

$\frac{3}{4}$ of 80 is $20 \times 3 = 60$

$\frac{3}{4}$ of 80

60

Fraction Bingo Board 1

48

36

6

5

4.5

17

18

25

Fraction Bingo Board 2

3

35

70

30

15

24

75

3.5

Fraction Bingo Board 3

Fraction Bingo Board 4

60

4

20

16

40

21

2

7.5

12

45

13

11

9

14

50

28

Smile 2300

 $\frac{1}{4}$ of 36

Smile 2300

 $\frac{1}{6}$ of 18

Smile 2300

 $\frac{1}{4}$ of 20

Smile 2300

 $\frac{4}{9}$ of 36

Smile 2300

 $\frac{3}{8}$ of 32

Smile 2300

 $\frac{1}{3}$ of 45

Smile 2300

 $\frac{1}{8}$ of 16

Smile 2300

 $\frac{3}{4}$ of 100

Smile 2300

 $\frac{2}{3}$ of 42

Smile 2300

 $\frac{3}{4}$ of 60

Smile 2300

 $\frac{1}{4}$ of 14

Smile 2300

 $\frac{1}{2}$ of 9

Smile 2300

 $\frac{4}{5}$ of 50

Smile 2300

 $\frac{1}{3}$ of 60

Smile 2300

 $\frac{3}{8}$ of 64

Smile 2300

 $\frac{1}{5}$ of 30

Smile 2300

 $\frac{2}{5}$ of 45

Smile 2300

 $\frac{1}{3}$ of 33

Smile 2300

$\frac{7}{8}$ of 16

Smile 2300

$\frac{1}{10}$ of 40

Smile 2300

$\frac{7}{10}$ of 100

Smile 2300

$\frac{1}{4}$ of 30

Smile 2300

$\frac{1}{2}$ of 42

Smile 2300

$\frac{5}{8}$ of 40

Smile 2300

$\frac{3}{4}$ of 80

Smile 2300

$\frac{3}{4}$ of 64

Smile 2300

$\frac{1}{2}$ of 34

Smile 2300

$\frac{3}{5}$ of 50

Smile 2300

$\frac{1}{2}$ of 70

Smile 2300

$\frac{5}{6}$ of 60

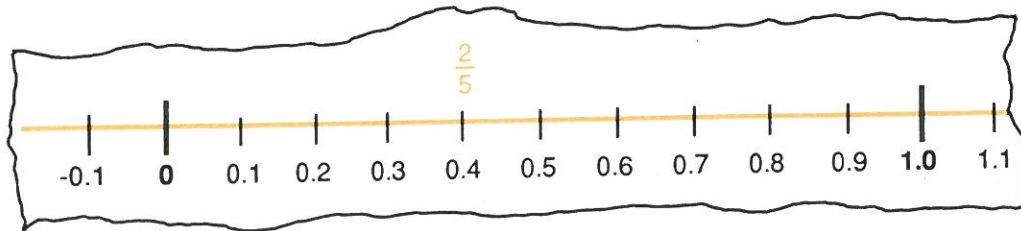
Smile 2300

$\frac{1}{2}$ of 26

Smile 2300

$\frac{6}{7}$ of 42

Finding Equivalent Fractions



$$\frac{2}{5} = 2 \div 5$$

$$= 0.4$$

$$\frac{4}{10} = 4 \div 10$$

$$=$$

$$\frac{6}{15} =$$

$$=$$

1. Find other fractions that equal 0.4 .

These are **equivalent fractions**.
Explain what 'equivalent' means.

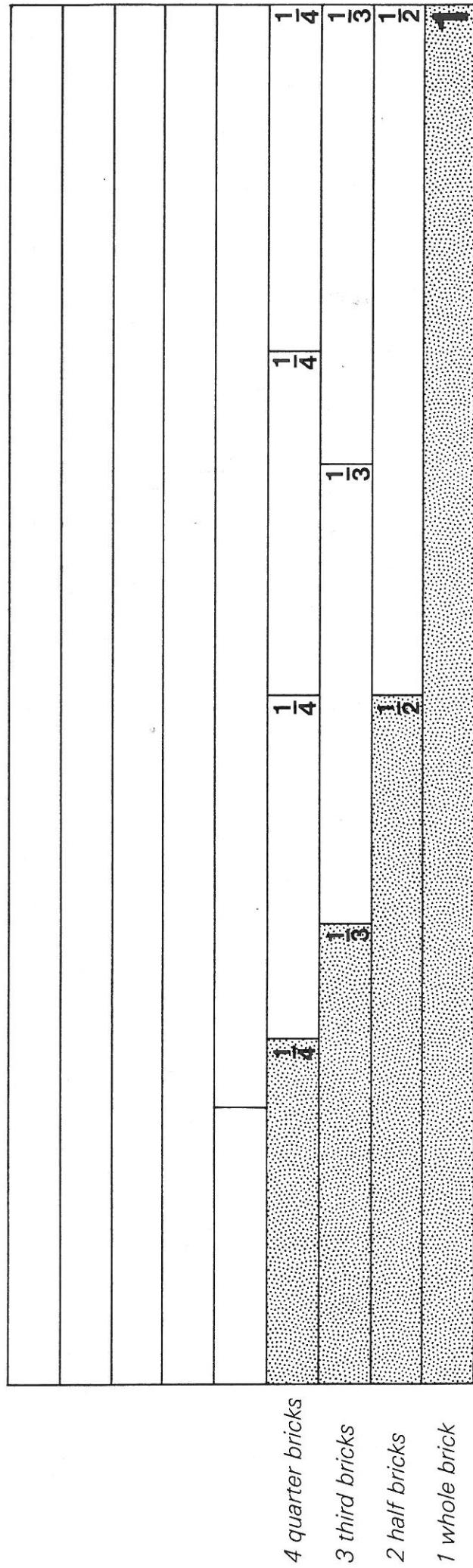
2. Find at least 3 fractions equivalent to each of these.

a) $\frac{1}{2}$

b) $\frac{3}{4}$

c) $\frac{2}{3}$

3. Choose another fraction and find some that are equivalent to it.



This wall has been built up on one long brick.
The second layer has two $\frac{1}{2}$ bricks.
The third layer has three $\frac{1}{3}$ bricks.

1. How many $\frac{1}{4}$ bricks are the same as one whole brick?
2. Add on the layers which have:

(a) $\frac{1}{5}$ bricks
(b) $\frac{1}{6}$ bricks
(c) $\frac{1}{8}$ bricks
(d) $\frac{1}{10}$ bricks
(e) $\frac{1}{12}$ bricks

Label each brick and shade the first one in each layer.

3. Which is smaller? (a) $\frac{1}{3}$ or $\frac{1}{10}$
 (b) $\frac{5}{8}$ or $\frac{3}{4}$ (c) $\frac{3}{4}$ or $\frac{2}{3}$ or $\frac{7}{10}$
4. Write down $\frac{3}{4}$, $\frac{3}{4}$, $\frac{3}{5}$, $\frac{5}{6}$, $\frac{5}{8}$ and $\frac{7}{12}$ in order of size.
5. The wall shows that $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent fractions, i.e. $\frac{1}{2} = \frac{2}{4}$
- Find some more equivalent fractions.*

Find some more equivalent fractions.

Equivalent Fraction Pairs

Smile 2374

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

The numbers above can be used to make two pairs of equivalent fractions. No number can be used more than once.

example:

$\frac{3}{4} \equiv \frac{6}{8}$	$\frac{1}{2} \equiv \frac{5}{10}$
$\frac{7}{\quad}$ and $\frac{9}{\quad}$ are not used.	
$\equiv$ means "is equivalent to"	

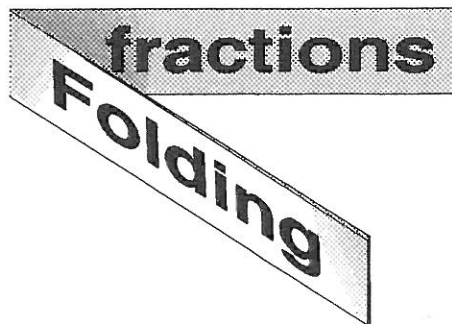
- Find another way of making two pairs of equivalent fractions using the numbers 1 to 10.
 - Which numbers are not used?
- How many equivalent fraction pairs can you make using the numbers 1 to 20?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Remember: No number can be used more than once.

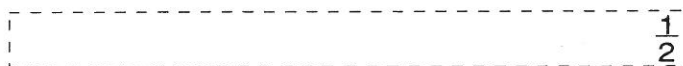
- Which numbers are not used?
Why?

You will need Smile cut-out sheet 2160a.

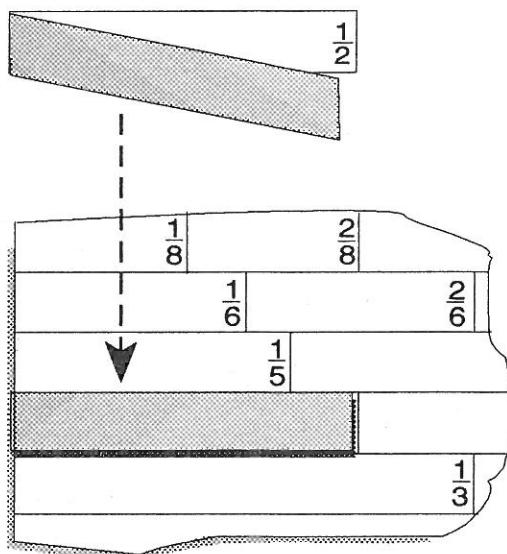


What is half of a half?

- Cut out the $\frac{1}{2}$ from the cut-out sheet.



- Fold it in half.



- Match it against the **Fraction Ruler** below.

$$\frac{1}{2} \text{ of } \frac{1}{2} = \frac{1}{4}$$

Turn over

$\frac{1}{12}$	$\frac{2}{12}$	$\frac{3}{12}$	$\frac{4}{12}$	$\frac{5}{12}$	$\frac{6}{12}$	$\frac{7}{12}$	$\frac{8}{12}$	$\frac{9}{12}$	$\frac{10}{12}$	$\frac{11}{12}$	$\frac{12}{12}$
$\frac{1}{10}$	$\frac{2}{10}$	$\frac{3}{10}$	$\frac{4}{10}$	$\frac{5}{10}$	$\frac{6}{10}$	$\frac{7}{10}$	$\frac{8}{10}$	$\frac{9}{10}$	$\frac{10}{10}$		
$\frac{1}{8}$	$\frac{2}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	$\frac{5}{8}$	$\frac{6}{8}$	$\frac{7}{8}$	$\frac{8}{8}$				
$\frac{1}{6}$	$\frac{2}{6}$	$\frac{3}{6}$	$\frac{4}{6}$	$\frac{5}{6}$	$\frac{6}{6}$						
$\frac{1}{5}$	$\frac{2}{5}$	$\frac{3}{5}$	$\frac{4}{5}$	$\frac{5}{5}$							
$\frac{1}{4}$	$\frac{2}{4}$	$\frac{3}{4}$	$\frac{4}{4}$								
$\frac{1}{3}$	$\frac{2}{3}$	$\frac{3}{3}$									
$\frac{1}{2}$	$\frac{2}{2}$										
											1

Fraction Ruler

Fraction Ruler

$\frac{1}{12}$	$\frac{2}{12}$	$\frac{3}{12}$	$\frac{4}{12}$	$\frac{5}{12}$	$\frac{6}{12}$	$\frac{7}{12}$	$\frac{8}{12}$	$\frac{9}{12}$	$\frac{10}{12}$	$\frac{11}{12}$	$\frac{12}{12}$
$\frac{1}{10}$	$\frac{2}{10}$	$\frac{3}{10}$	$\frac{4}{10}$	$\frac{5}{10}$	$\frac{6}{10}$	$\frac{7}{10}$	$\frac{8}{10}$	$\frac{9}{10}$	$\frac{10}{10}$		
$\frac{1}{8}$	$\frac{2}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	$\frac{5}{8}$	$\frac{6}{8}$	$\frac{7}{8}$	$\frac{8}{8}$				
$\frac{1}{6}$	$\frac{2}{6}$	$\frac{3}{6}$	$\frac{4}{6}$	$\frac{5}{6}$	$\frac{6}{6}$						
$\frac{1}{5}$	$\frac{2}{5}$	$\frac{3}{5}$	$\frac{4}{5}$	$\frac{5}{5}$							
$\frac{1}{4}$	$\frac{2}{4}$	$\frac{3}{4}$	$\frac{4}{4}$								
$\frac{1}{3}$	$\frac{2}{3}$	$\frac{3}{3}$									
$\frac{1}{2}$											
											1

- Find $\frac{1}{2}$ of $\frac{1}{3}$ by cutting out the $\frac{1}{3}$, folding and matching it against the **Fraction Ruler**. Record your result.

Find and record

- $\frac{1}{2}$ of $\frac{1}{4}$
- $\frac{1}{2}$ of $\frac{1}{5}$
- $\frac{1}{2}$ of $\frac{1}{6}$

Now find and record

- $\frac{1}{4}$ of $\frac{1}{2}$
- $\frac{1}{3}$ of $\frac{1}{4}$
- $\frac{1}{3}$ of $\frac{1}{2}$
- $\frac{1}{4}$ of $\frac{1}{3}$

- What do you notice about your results?

Find these. You may be able to match your folded fraction against more than one fraction on the **Fraction Ruler**.

- $\frac{1}{2}$ of $\frac{2}{3}$
- $\frac{1}{2}$ of $\frac{3}{4}$
- $\frac{1}{2}$ of $\frac{2}{5}$
- $\frac{1}{3}$ of $\frac{3}{4}$

- What do you notice about your results?

- Work out $\frac{2}{3}$ of $\frac{3}{4}$.



	1
	$\frac{1}{2}$
	$\frac{1}{3}$
	$\frac{1}{4}$
	$\frac{1}{5}$
	$\frac{1}{6}$
	$\frac{1}{2}$
	$\frac{1}{4}$
	$\frac{1}{2}$
	$\frac{1}{3}$
	$\frac{2}{3}$
	$\frac{3}{4}$
	$\frac{2}{5}$
	$\frac{3}{4}$
	$\frac{3}{4}$

Fraction Flags

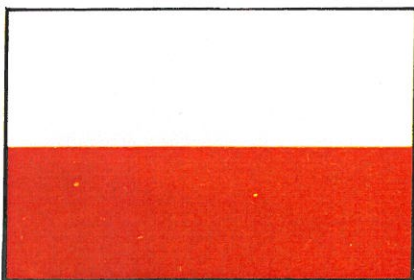
Smile 1689



Colombia

Many national flags are designed using simple fractions. The flag of Colombia is $\frac{1}{2}$ yellow, $\frac{1}{4}$ blue and $\frac{1}{4}$ red.

Use fractions to describe these flags:



1. Poland



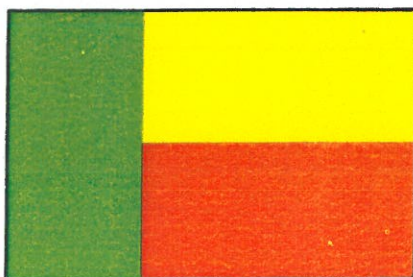
2. Holland



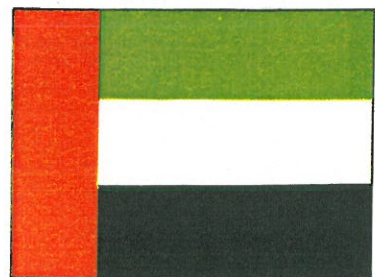
3. Mauritius



4. Belgium



5. Benin



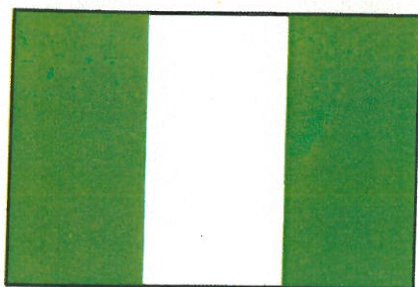
6. United Arab Emirates

Some flags have more than one section the same colour. Austria has $\frac{2}{3}$ red.



Austria

Use fractions to describe the flags below:

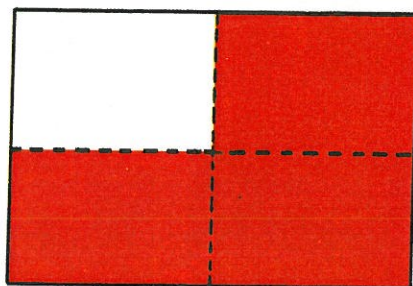


7. Nigeria

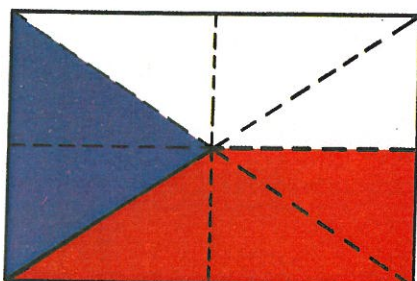


8. Uganda

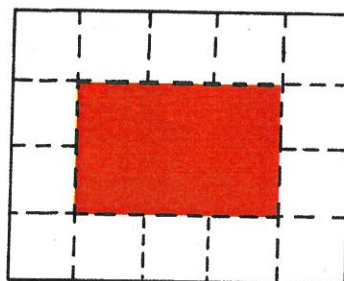
For some flags, like Abu Dhabi, we need to draw in a few extra lines to recognise what fractions have been used. The flag of Abu Dhabi is $\frac{3}{4}$ red and $\frac{1}{4}$ white.



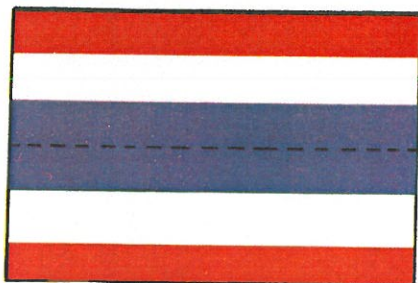
Abu Dhabi



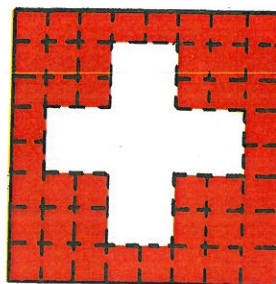
9. Czechoslovakia



10. Sharjah

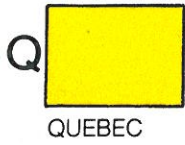
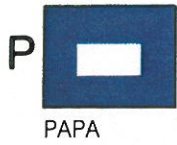
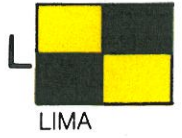
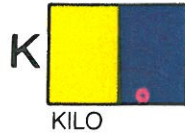
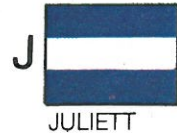
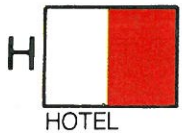
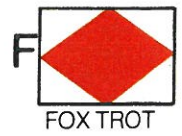
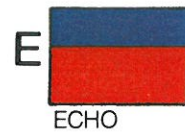


11. Thailand



12. Switzerland

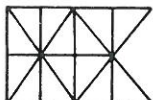
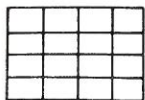
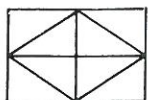
Ships can use the signal flags below to send messages.



13. What message is the ship signalling?

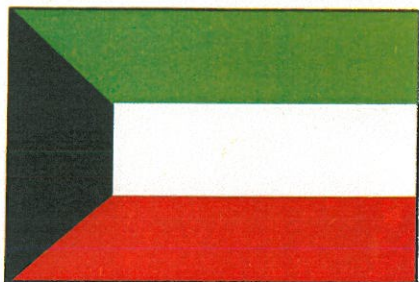


These outlines will help you to answer the next four questions about the signal flags:



14. What fraction of the flag is white on F?
15. What fraction of the flag is red on U?
16. What fraction of the flag is blue on N?
17. What fraction of the flag is blue on A?
18. What fractions can you see on other flags?

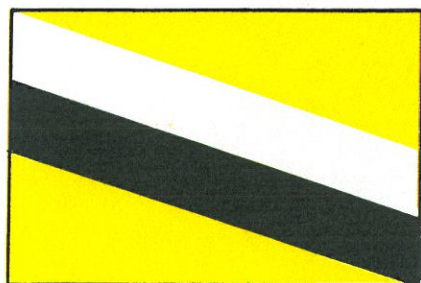
Finally, you may like to look at the national flags of Kuwait, Guyana and Brunei. Their designs are more unusual.



Kuwait

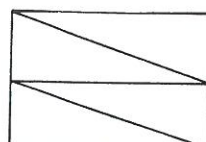
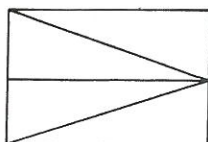
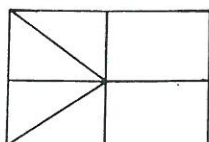
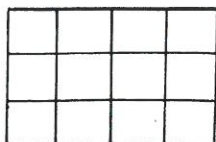


Guyana



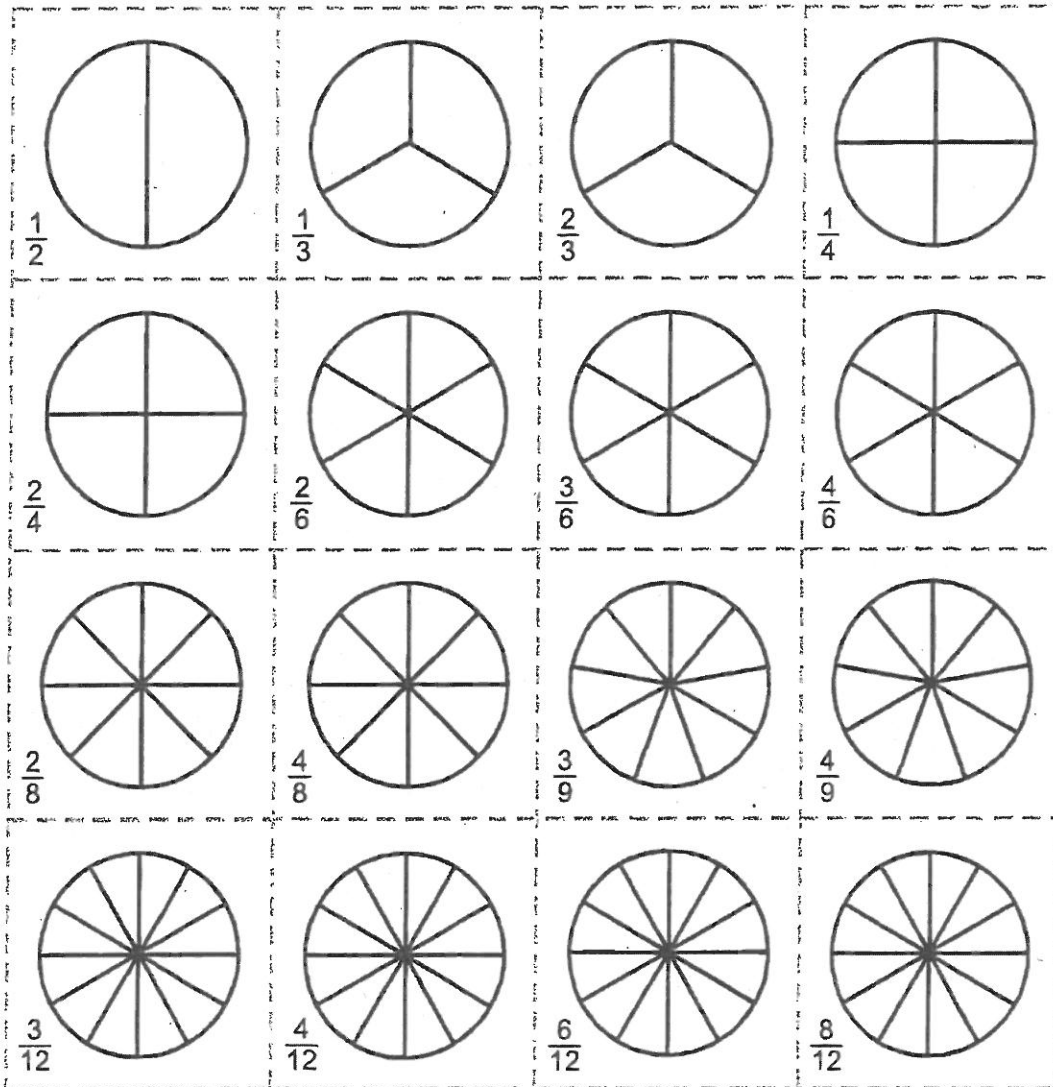
Brunei

Hints:



Equivalent Fractions Sort

1. Shade the fractions of the circles below.



2. Cut out all the fractions and arrange them in order of size.

3. Which of the fractions are equivalent?

(equivalent fractions represent the same proportion).

4. Find 2 fractions which are equivalent to $\frac{3}{4}$.