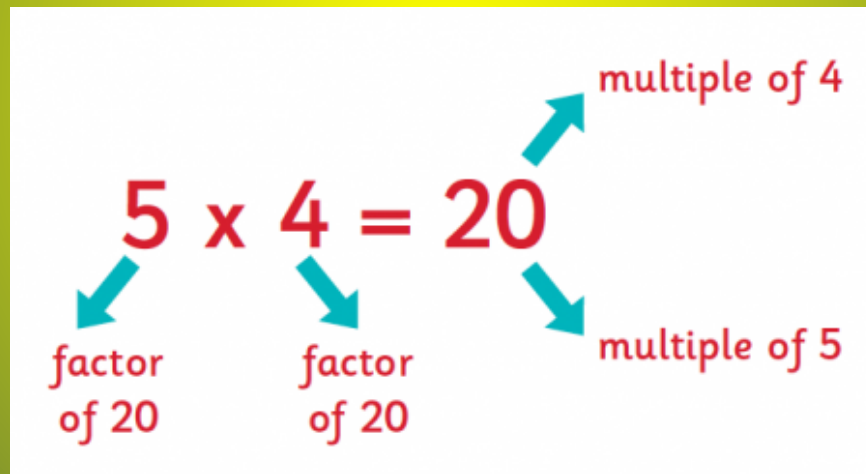


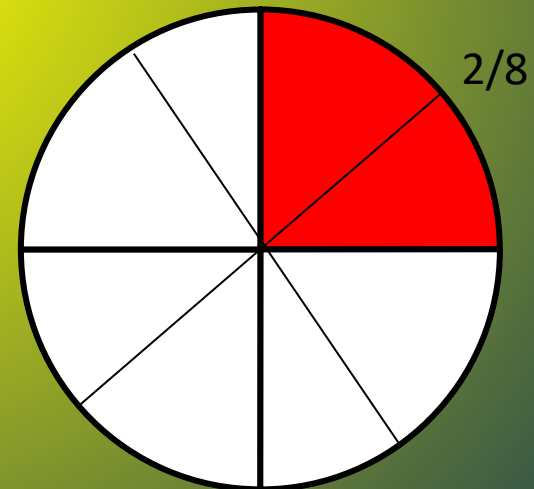
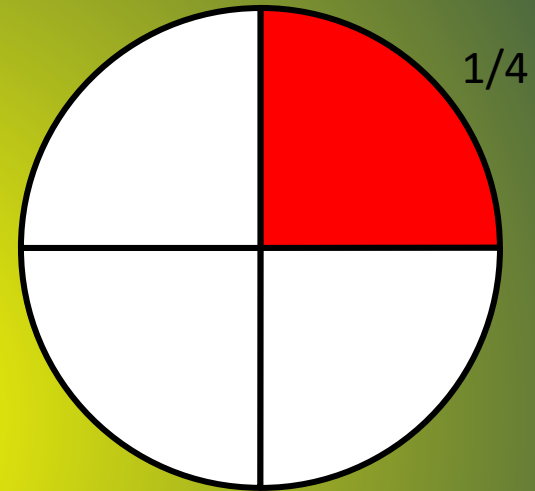
30.4.2020

I can add and subtract fractions with denominators that are multiples of the same number.



GENERAL RULE FOR CALCULATING WITH FRACTIONS

- Whatever you do to the bottom of the fraction, you do the same to the top.
- This relates to addition and subtraction.
- Why do you think this is?



Equivalent Fractions

- What ever you do to the bottom do to top, whatever you do to the top do to the bottom.

EG: $\frac{1}{3} = \frac{2}{6}$ $\frac{4}{5} = \frac{12}{15}$

Diagram illustrating equivalent fractions with arrows showing the operations used to convert them:

- For $\frac{1}{3} = \frac{2}{6}$: An arrow labeled $\times 2$ points from 1 to 2, and another arrow labeled $\times 2$ points from 3 to 6.
- For $\frac{4}{5} = \frac{12}{15}$: An arrow labeled $\times 3$ points from 4 to 12, and another arrow labeled $\times 3$ points from 5 to 15.

+ - RULES FOR ADDING and SUBTRACTING FRACTIONS

- Make sure the denominators (bottom numbers) are the same, (change them if they are not) then add or subtract the top numbers and place the answer over the denominator
- You have to find the LCM (Least Common Multiple) and multiply the fraction.

Multiples of 3:

0, 3, 6, 9, 12, 15, 18, 21, 24, ...

Multiples of 4:

0, 4, 8, 12, 16, 20, 24, 28 ...




The LCM of 3 and 4 is 12.

Try these

- $\frac{4}{7} + \frac{3}{7}$
- $\frac{7}{10} - \frac{2}{10}$
- $\frac{3}{12} + \frac{10}{12}$
- $\frac{6}{20} + \frac{17}{20}$

How to solve when denominators are different?

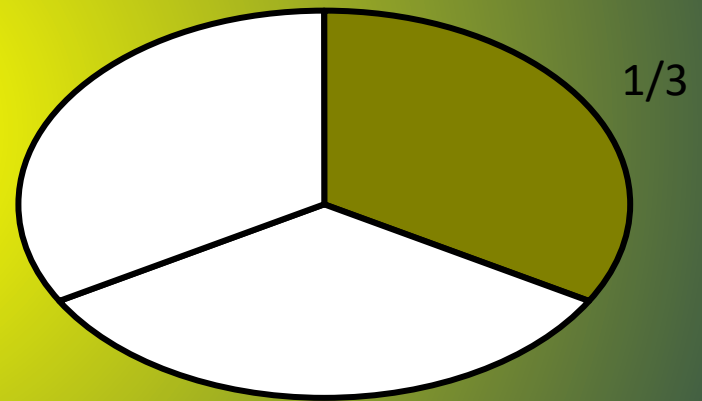
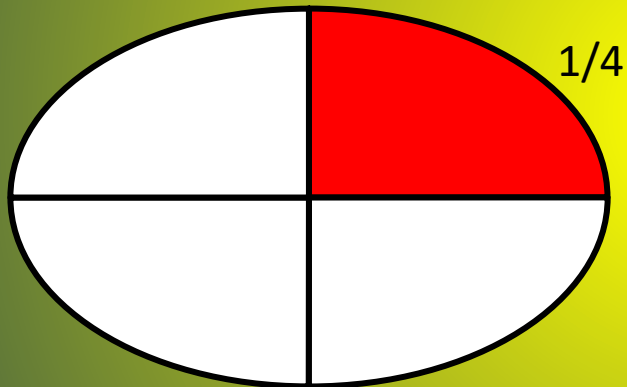
$$\frac{3}{8} + \frac{1}{4}$$

- What is the problem?
- How would I solve this?
- If I multiply 4 by 2 I will get 8.  8 is my LCM. What else do I have to do?
- Whatever you do to the bottom of the fraction you do the same to the top  $1 \times 2 = 2$
- $1/4 = 2/8$  $3/8 + 2/8 =$

$$\frac{1}{4} + \frac{1}{3}$$

What can we change them to?

What will be the new denominator?



4 and 3 both divide into 12

So we can change them into 12ths

Solution

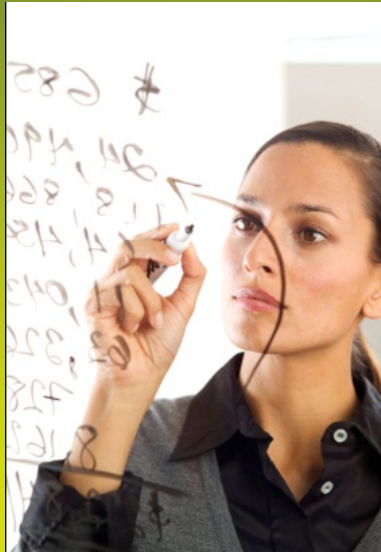
$$\frac{1}{4} \times 3 = \frac{\underline{1}}{4} \quad (\times 3) = \frac{\underline{3}}{12}$$

$$\frac{1}{3} \times 4 = \frac{\underline{1}}{3} \quad (\times 4) = \frac{\underline{4}}{12}$$

$$\frac{\underline{3}}{12} + \frac{\underline{4}}{12} = \frac{\underline{7}}{12}$$

Task 1

- a) $1/3 + 2/6$
- b) $1/5 + 4/10$
- c) $6/7 - 4/21$
- d) $2/4 + 7/20$
- e) $7/8 + 15/32$
- f) $34/50 - 4/10$
- g) $82/100 - 4/50$
- h) $34/35 + 4/21$



Task 2

- a) $3/5 + 9/20$
- b) $3/4 - 8/12$
- c) $6/7 - 18/28$
- d) $2/3 + 7/12$
- e) $6/9 + 27/36$
- f) $5/8 + 2/6$
- g) $4/5 - 2/7$
- h) $4/6 + 3/5$
- i) $5/9 - 2/8$
- j) $5/9 + 12/27$