Can I subtract fractions with different denominators?

To subtract fractions, you use the same steps as yesterday – this time remembering to SUBTRACT the numerators!

Remember: in order to add or subtract fractions, their denominators need to be the same.

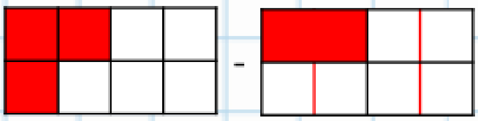
This is where you use your ability to find equivalent fractions – this was covered in the learning set just before half term.

Imagine you are trying to solve $^{3}/_{8} - {^{1}/_{4}}$

Step 1

Convert both fractions to the same denominator by finding equivalent fractions. To do this, you will need to look at the relationship between the two denominators you have been given. In this case, one denominator (8) is double the other (4) so:

$$^{3}/_{8} - \overset{\times 2}{^{1}/_{4}}_{\times 2} = {^{3}/_{8}} - {^{2}/_{8}}$$



Step 2

Subtract the numerators together **but not the denominators!**

$$^{3}/_{8} - {^{2}/_{8}} = {^{1}/_{8}}$$

Step 3

Simplify the answer if you can.

$^{1}/_{8}$ is a unit fraction (has a numerator of 1) so cannot be simplified.

However,

$^{2}/_{6}$ (which is the example answer given in the table below) can be simplified

$$\overset{\div 2}{^{2}/_{6}}_{\div 2} = {^{1}/_{6}}$$

Now it's your turn ….

	Convert Question to Same Denominator	Answer
$^5/_6 - {}^1/_2 =$	(x3) $^5/_6 - {}^3/_6 =$	$= {}^2/_6$ or $^1/_3$
$^6/_8 - {}^1/_2 =$		
$^1/_2 - {}^1/_6 =$		
$^9/_{16} - {}^1/_4 =$		
$^2/_5 - {}^3/_{10} =$		
$^3/_8 - {}^5/_{24} =$		
$^6/_7 - {}^5/_{14} =$		
$^3/_4 - {}^5/_{12} =$		
$^2/_3 - {}^4/_9 =$		

Mind-blowing Challenge:

$^7/_8 - {}^1/_2 =$		
$^5/_6 - {}^1/_5 =$		
$^1/_3 - {}^1/_4 =$		
$^2/_5 - {}^1/_8 =$		

Answers

	Convert Question to Same Denominator	Answer
$^5/_6 - {}^1/_2 =$	(x3) $^5/_6 - {}^3/_6 =$	$= {}^2/_6$ or $^1/_3$
$^6/_8 - {}^1/_2 =$	(x4) $^6/_8$ - $^4/_8$	$= {}^2/_8$ or $^1/_4$
$^1/_2 - {}^1/_6 =$	(x3) $^3/_6$ - $^1/_6$	$= {}^2/_6$ or $^1/_3$
$^9/_{16} - {}^1/_4 =$	(x4) $^9/_{16}$ - $^4/_{16}$	$= {}^5/_{16}$
$^2/_5 - {}^3/_{10} =$	(x2) $^4/_{10}$ - $^3/_{10}$	$= {}^1/_{10}$
$^3/_8 - {}^5/_{24} =$	(x3) $^9/_{24}$ - $^5/_{24}$	$= {}^4/_{24}$ or $^1/_6$
$^6/_7 - {}^5/_{14} =$	(x2) $^{12}/_{14}$ - $^5/_{14}$	$= {}^7/_{14}$ or $^1/_2$
$^3/_4 - {}^5/_{12} =$	(x3) $^9/_{12}$ - $^5/_{12}$	$= {}^4/_{12}$ or $^1/_3$
$^2/_3 - {}^4/_9 =$	(x2) $^6/_9$ - $^4/_9$	$= {}^2/_9$

$^7/_8 - {}^1/_2 =$		
$^5/_6 - {}^1/_5 =$	$^{25}/_{30}$ - $^6/_{30}$	$^{19}/_{30}$
$^1/_3 - {}^1/_4 =$	$^4/_{12}$ - $^3/_{12}$	$^1/_{12}$
$^2/_5 - {}^1/_8 =$	$^{16}/_{40}$ - $^5/_{40}$	$^{11}/_{40}$