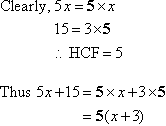
We know that:

*a*(*b* + *c*) = *ab* + *ac*

The reverse process, *ab* + *ac* = *a*(*b* + *c*), is called **taking out the common factor**.

Consider the factorisation of the expression 5*x* + 15.

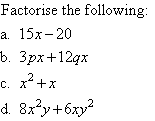


Note that the [common factor](http://www.mathsteacher.com.au/year9/ch08_factors/01_factors/number.htm#M1) 5 has been taken out and placed in front of the brackets.  The expression inside the brackets is obtained by dividing each term by 5.

**In general:**

To factorise an algebraic expression, take out the [highest common factor](http://www.mathsteacher.com.au/year9/ch08_factors/01_factors/number.htm#M3) and place it in front of the brackets.  Then the expression inside the brackets is obtained by dividing each term by the highest common factor.

Example 6



*Solution:*

**http://www.mathsteacher.com.au/year9/ch08_factors/03_common/Image1842.gif**

**http://www.mathsteacher.com.au/year9/ch08_factors/03_common/Image1843.gif**

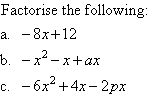
**http://www.mathsteacher.com.au/year9/ch08_factors/03_common/Image1844.gif**

http://www.mathsteacher.com.au/year9/ch08_factors/03_common/Image1845.gif

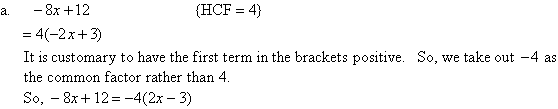
**Note:**

The process of taking out a [common factor](http://www.mathsteacher.com.au/year9/ch08_factors/01_factors/number.htm#M1) is of great importance in algebra.  With practice you will be able to find the [highest common factor](http://www.mathsteacher.com.au/year9/ch08_factors/01_factors/number.htm#M3) (HCF) readily and hence factorise the given expression.

Example 7



*Solution:*

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**http://www.mathsteacher.com.au/year9/ch08_factors/03_common/Image1848.gif**

**http://www.mathsteacher.com.au/year9/ch08_factors/03_common/Image1849.gif**

**Note:**

We can check the answer by using the [Distributive Law](http://www.mathsteacher.com.au/year9/ch01_distributive/01_distibutive/dist.htm#m4).