## CLASS DISCUSSION

Now try to substitute the following given values of x into equation (B): 2x+10=2(x+5), and check if the left-hand side (L.H.S.) of the equation is equal to the right-hand side (R.H.S.).

(iii) When 
$$x = -\frac{1}{2}$$
, L.H.S. = = R.H.S. = = Yes No

From the results obtained in the Class Discussion, we can see that equation (B) is satisfied not only by x = 2, but also by many other values of x. In fact, equation (B) is satisfied by <u>ALL</u> values of x. Such an equation is called an identity\*.

An identity in x is an equation in x which is satisfied by ALL values of x.

To indicate an equation is an identity, we replace the equal sign '=' in the equation by the identity symbol '=' which means 'is identical to'. Hence equation (B) is written as 2x+10=2(x+5) to show that it is an identity.

Notice that when we multiply out the R.H.S. of the identity  $\triangleleft 2(x+5) = 2x+10$ 2x+10 = 2(x+5), we obtain an expression identical to that in the L.H.S.