Distributive Property

What is the product of six and the sum of five and two? You can simplify five plus two first to get seven, and then you can multiply six times seven. The answer is 42. We can construct an area model to help us visualize the product of six and seven as 42.

The sum of five and two multiplied by six is equal to 42. If one separates the addends and multiplies each addend by six, will the product still be 42? How might one determine the result for the sum of six times five and six times two? We can draw a model to help us visualize what the final result might be. Notice that six multiplied by five is 30, and six multiplied by two is 12. The combined amount is 42. The product of the sum of five plus two and six is 42. The sum of six times five and six times two is 42. We get the same result for both expressions when we simplify them. This is an example of the distributive property.

These generalized equations represent the distributive property.