

# [Effect on the area of triangle essay sample](https://assignbuster.com/effect-on-the-area-of-triangle-essay-sample/)

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## NameAbstract

We need to find the effect on the area of the triangle if the base is doubled and the height is cut half and another case is if the height remains the same with base doubled . The problem is solved with appropriate examples and logic.

## Solution to the problem

A triangle is a three sided polygon with any one of the side can be base but we generally consider the one drawn at the bottom which is used to find the area of the triangle. The height or the altitude of triangle is the perpendicular drawn from the base to the opposite vertex.   
The Area of triangle = ½ base x height . This is shown in the following Figure 1

## Step 1

Let us suppose the base of the triangle = b and height = h

## Step 2

Multiply base by the height first and then the result by ½ we get,   
Area(A₁) = ½( b x h) = ½ (bh). Eq(1)

## First Case:

Step 1   
Now if the base is doubled to 2b the new base= b₁ and height is cut to h/2 the new height= h₁ shown in Figure 2

## Step 2

Now putting the values in Eq(1) and Multiplying base and height and the result with ½   
we get   
Area(A₂) = ½ (b₁ x h₁)   
= ½( 2b x h/2 )[Since b₁= 2b and h₁= h/2]   
= (2bh4)

## Step 3

Dividing numerator and denominator by 2 we get   
= (bh)/2   
= ½ (base x height) = A₁   
Therefore, A₂ = A₁

## So, we there is no change in area when the base is doubled and height is cut half.

Second case   
In this case base is doubled but height remains the same.   
Step 1   
Base is the same as in first case so b₁ = 2b and new height h₂ = h   
.   
Step 2

## Now putting the values in Eq(1) and Multiplying base and height and then with ½

we get   
Area(A₃) = ½ (b₁ x h₂ )   
= ½ (2bx h) [ since b₁= 2b and h₂= h]

## Step3

Dividing 2 from both numerator and denominator   
= (2bh)/2   
= (bh)   
= ½( bh) x ½ (bh)   
Therefore, A₃ =. (A₁ x A₁)

## So, this shows that area is doubled if the base is doubled but height remains the same.

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