

# [Example of finding the hidden treasure essay](https://assignbuster.com/example-of-finding-the-hidden-treasure-essay/)

## Maths Assignment

According to the given problem, Ahmed’s map states that the treasure is 2x+6 steps away from the Castle Rock. At the same time, Vanessa’s map states that the treasure is x steps north and then 2x+4 steps east. Analyzing the two statements, we get that, there are two paths to reach the treasure from the Castle Rock. One is x steps to the north from the starting point and then 2x+4 steps to the east and the other is 2x+6 steps from the Castle Rock. Only solution to this problem is that, Castle Rock and treasure form two vertices of a right angled triangle, with the paths of x and 2x+4 making 90 degrees and path of 2x+6 being the hypotenuse. So this is a problem on Pythagorean theorem.

## According to Pythagorean theorem,

x2 + (2x + 4)2 = (2x +6)2

## Solving this equation, we get,

x2 + (4x2 + 16x + 16) = ( 4x2 +24x +36) [as (a+b)2 = a2 +2ab+b2]   
5x2 + 16x +16= 4x2 +24x + 36   
(5x2 -4x2) +(16x-24x)+(16-36)

## Hence, on solving, we end up getting a quadratic equation,

x2 – 8x-20= 0

## Solving the quadratic equation, we get ,

x2 -10x+2x-20= 0   
ie. x(x-10) +2(x-10)= 0   
ie.(x-10)(x+2)= 0

## Solving according to zero factor property, we get a compound equation,

(x-10)= 0 or (x+2)= 0   
So value of x= 10 or x=(-2)   
If x= 10,

## They will have to walk 10 steps to the north, 24 steps to the eastor 26 steps directly.

But, if x= (-2),   
Then they will have to walk 2 steps in south direction and 2x-4 ie. Zero steps in east , which contradicts the statement given in the problem.   
So the best solution is x= 10 steps.

## This solution can be reverse checked as well.

The numbers 10, 24 and 26 should satisfy Pythagorean theorem.   
(10)2 + (24)2 = 100 + 576   
= 676   
=(26)2   
Hence , to find the treasure, they have to walk 10 steps north and 24 steps to the east or 26 steps directly from Castle Rock.