

DAYSPRING INTERNATIONAL ACADEMY
Mathletics Problem of the Day for Upper Secondary

Read this question *carefully*. You have 7 minutes to answer write your solution on this paper as well solution on the board provided.

Group's Name: _____

Quiz Master's Name: Mr. Charles Fiende

Time Allowed: 7 minutes

1. *Challenge Problem.* Two sides of a triangle have lengths 6cm and 8cm . Find an interval for the third side.

Solution:

The basic idea here is that *the sum of any 2 sides of a triangle is always bigger than the third side*. Hence, let x be the third side and 6cm and 8cm being the other sides as given in the question, then by this statement,

$$6 + 8 > x, \quad \Rightarrow 14 > x.$$

Again,

$$6 + x > 8, \quad \Rightarrow x > 2.$$

Also,

$$8 + x > 6, \quad \Rightarrow x > -2.$$

We can see that the value of x is in the interval,

$$2 < x < 14.$$