

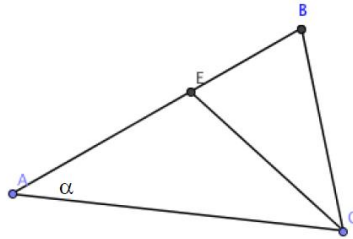


January 2014

Department of Mathematics

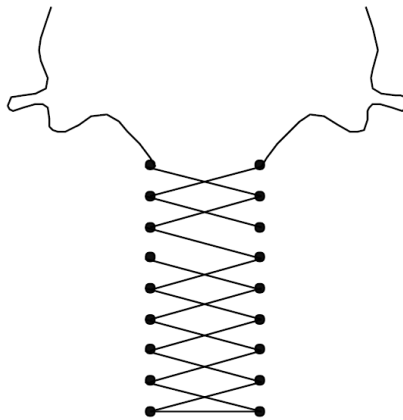
PROBLEM SOLVING CHALLENGE

1. In the diagram below find the measure of the angle α if $AB = AC$ and $AE = CE = BC$



2. The sum of four numbers is x . Suppose that each of the four numbers is now increased by 1. These four new numbers are added together and then the sum is tripled. What is the value, in terms of x , of the number thus formed?

3. Richie's Nike runners have 9 eyelets on each side, spaced 0.7 cm apart. Using the standard lacing shown below. Richie laces his right shoe so that there is 1.4 cm between the two parallel rows of eyelets. This leaves 15 cm of lace free on each side for tying. How long is the lace?



4. How many 10-digit positive integers use each and every one of the ten digits 0, 1, ____, 9 once and once only?
How many 10-digit numbers are there?
5. Can you find the next three terms in the following sequence; 1, 11, 21, 1211, 111221.....

Answers on an A4 sheet with your Name, Year and Class should be handed into the box in the office before 4pm on Friday 24th of January

Monthly Prizes for both Junior and Senior Cycle.*

Good Luck.

 Junior Cycle students only answer the circled questions; 1, 2 and 3.