



**The figure above is of a regular octagon with all its diagonals (5 full diagonals from each corner).**

**If you use only full diagonals and the sides of the octagon (i.e. 3 diagonals, or 2 diagonals and 1 side, or 1 diagonal and 2 sides):**

- 1) How many noncongruent triangles do you get?**
- 2) How many of these triangles are right triangles?**
- 3) How many of these triangles are isosceles triangles? Note that some isosceles triangles are also right triangles.**
- 4) How many of these triangles are equilateral triangles?**
- 5) How many of these triangles are obtuse triangles? Note that some isosceles triangles are also obtuse triangles.**

**You must answer all five questions and email your answers to [elmacon@pims.math.ca](mailto:elmacon@pims.math.ca) by Saturday 10th March. Correct answers will be entered into a draw, and one lucky student will be rewarded with free entry to the 2018 ELMACON contest.**