Math 118 - Dr. Miller - Quiz #10: Diagonals and ATTENDANCE - **Spontaneous In-class, Monday, 03/10/14**

Thoroughly explain how many diagonals a 98-gon has altogether.

(Explanations should have been modeled after the example directly from your notes and still on the board at this point in the class.)

From just one vertex, you could draw 95 *diagonals: you can make a diagonal from that vertex to each of the others except for itself and the two adjacent vertices it's already connected to. (Bonus* +1 *for the reasoning on discarding* 3 *vertices.)*

From all 98 *vertices, at* 95 *diagonals apiece, you could make* $98 \cdot 95$ *diagonals total.*

But you need to cut that total in half because each diagonal got counted from 2 *different vertices. (Each diagonal got double-counted.)*

$$Answer: \ \frac{98 \cdot 95}{2} = 4655 \ diagonals \ total$$