

NUMBER SENSE TIPS (JANUARY 2022)

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NUMBER OF TRIANGLES THAT CAN BE DRAWN USING 3 VERTICES OF AN N-GON

Example A : How many triangles can be drawn using 3 vertices of a hexagon? _____

$${}_n C_3 = {}_6 C_3 = \frac{6!}{3!3!} = \frac{(6)(5)(4)}{6} = 20$$

Example B : How many triangles can be drawn using 3 vertices of a septagon? _____

$${}_n C_3 = {}_7 C_3 = \frac{7!}{3!4!} = \frac{(7)(6)(5)}{6} = 35$$

NUMBER OF TRIANGLES THAT CAN BE DRAWN USING THE VERTEX OF AN N GON

Example A : How many triangles can be drawn using a vertex of a pentagon? _____

$${}_{n-1} C_2 = {}_{5-1} C_2 = {}_4 C_2 = \frac{4!}{2!2!} = \frac{24}{(2)(2)} = \frac{24}{4} = 6$$

Example B : How many triangles can be drawn using a vertex of an octagon? _____

$${}_{n-1} C_2 = {}_{8-1} C_2 = {}_7 C_2 = \frac{7!}{5!2!} = \frac{(7)(6)}{2} = \frac{42}{2} = 21$$