

March 14th

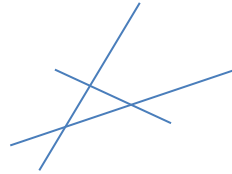
What is the maximum number of points of intersection that can be determined by ten straight lines?

One way to do this is build up a sequence:

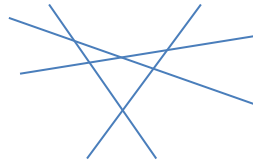
1 line = 0 intersecons

2 lines = 1 intersecons

3 lines = 3 intersecons



4 lines = 6 intersecons



5 lines = 10 intersecons

Therefore the sequence of number of intersecons is the triangular number .

i.e. 4 lines = T_3

For n lines = $T_{n-1} = \frac{1}{2} n(n+1)$

For 10 lines = $T_9 = \mathbf{0.5 \times 9 \times 10 = 45}$