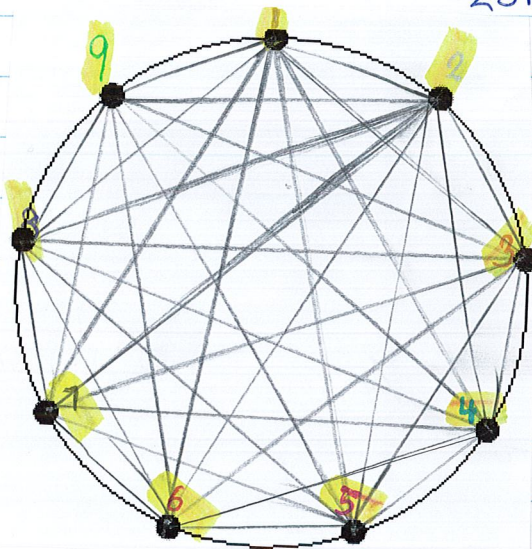


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Answer: 84 possible triangles

Explanation/steps

To get the answer of 84 possible triangles, I used permutation and combination strategies. First I named all the points a number from 1-9 like shown in the picture. Since triangle 123 is the same as 321, 213, 312, 231 and 132, I only will use the one that is



in the order of smallest to biggest, In this case 123. Before I started listing out triangles, I used a formula which was quicker. I used a permutation formula and a permutation to combination formula. It looked something like this. ↓

Number of dots = 9

Box slots = points of a triangle = 3

$$\frac{9 \times 8 \times 7}{3!} = \text{permutation possibilities}$$

$$\frac{9 \times 8 \times 7}{3!} =$$

convert to combination = combination

$$\frac{9 \times 8 \times 7}{3 \times 2 \times 1} = \boxed{84}$$

↑ answer

$$\begin{array}{r} (9 \times 8) \\ 72 \times 7 = 72 \\ \times 7 \\ \hline 504 \end{array}$$

$$\begin{array}{r} 084 \\ 6 \overline{) 504} \\ \underline{-48} \\ 24 \\ \underline{-24} \\ 0 \end{array}$$

Then I listed out all the ways of how to make a triangle from the three points/ numbers like shown below. ↓

123	147	235	268	367	479
124	148	236	269	368	489
125	149	237	278	369	
126	156	238	279	378	567
127	157	239	289	379	568
128	158	245		389	569
129	159	246	345		578
134	167	247	346	456	579
135	168	248	347	457	589
136	169	249	348	458	678
137	178	256	349	459	679
138	179	257	356	467	689
139	189	258	357	468	789
145		259	358	469	
146	234	267	359	478	