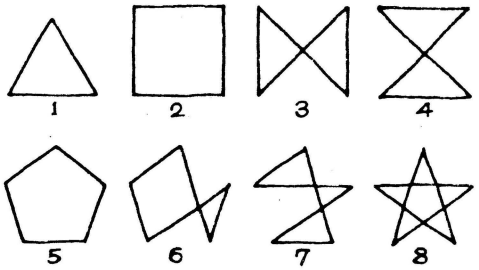
How Many Ways?



Put three dots on a piece of paper to mark the three corners of a triangle. Figure 1 shows the only way to connect those three points by straight lines forming a continuous path that ends on the point from which it started.

There are two different ways to join the points of a square. See Figures 2 and 3 (Figure 4 is simply a rotation of Figure 3). In the case of a regular pentagon, there are four different ways to connect the points with a continuous line, as you can see in Figures 5, 6, 7, and 8. Find all the ways to join the six corners of a regular hexagon. Remember: the path must visit each point and return to its starting place.