In the diagram, $\angle APB = 12^\circ$. Points $Q, R, S, T, \ldots$ alternate from one arm of the angle to the other, each point located farther away from $P$ than the point before and $PQ = QR = RS = ST = \ldots$. Eventually, one of the isosceles triangles will be an equilateral triangle. How many isosceles triangles will be formed before the equilateral triangle is formed?