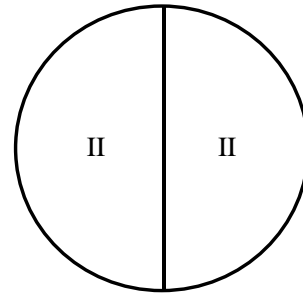
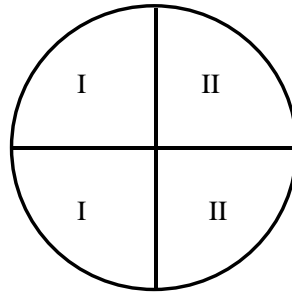
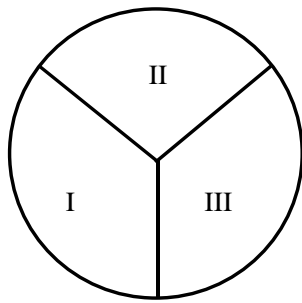
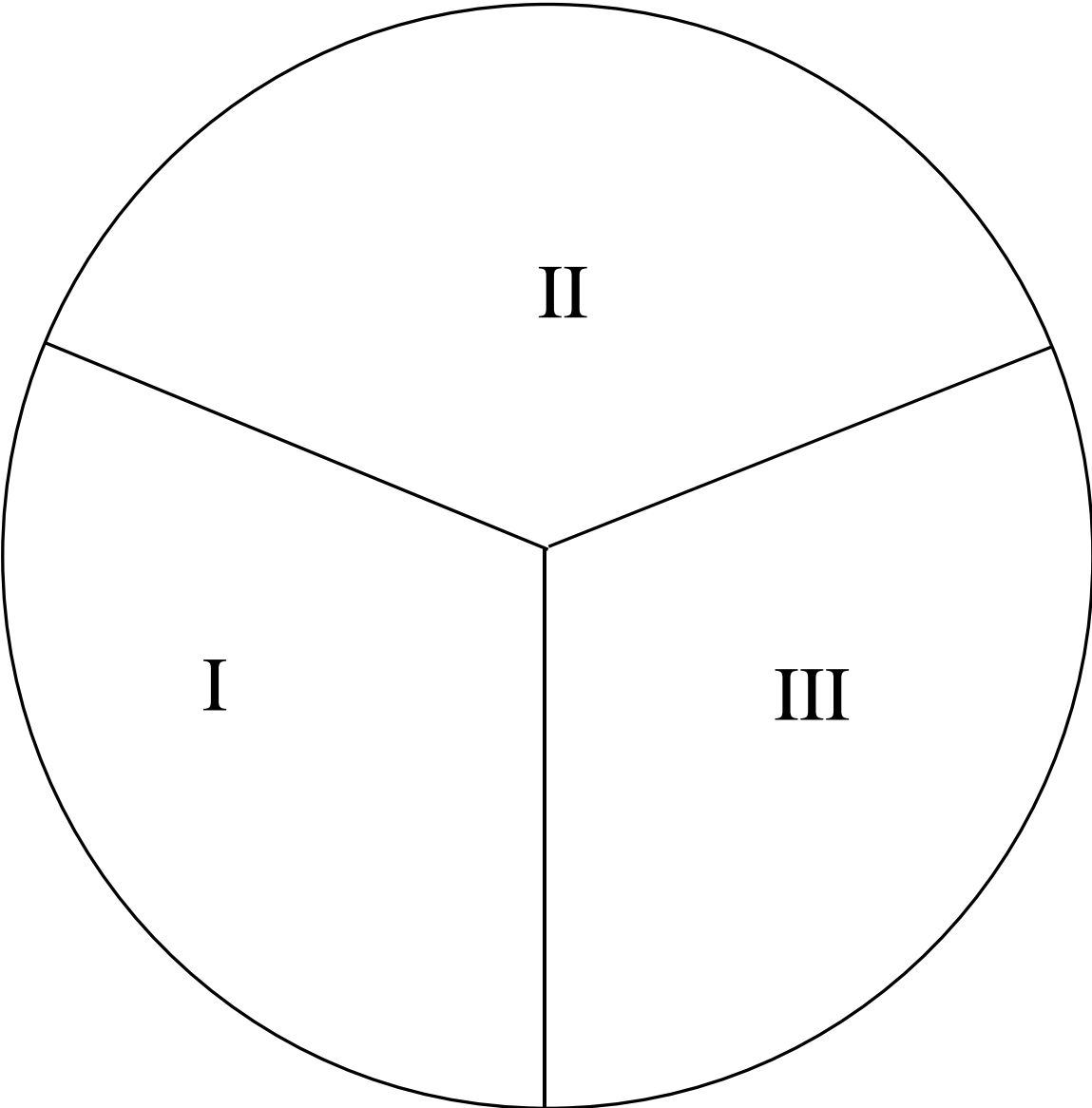
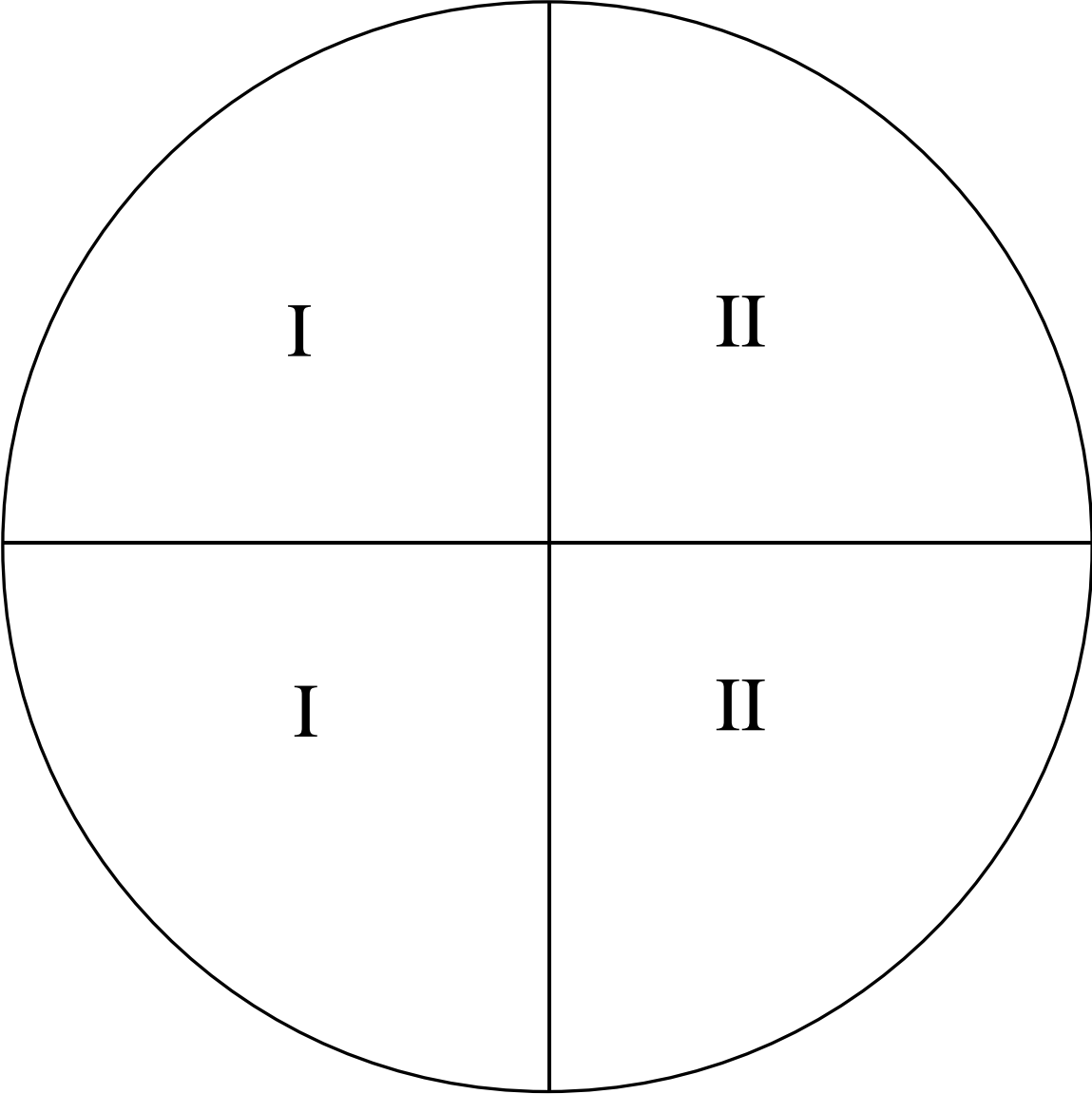


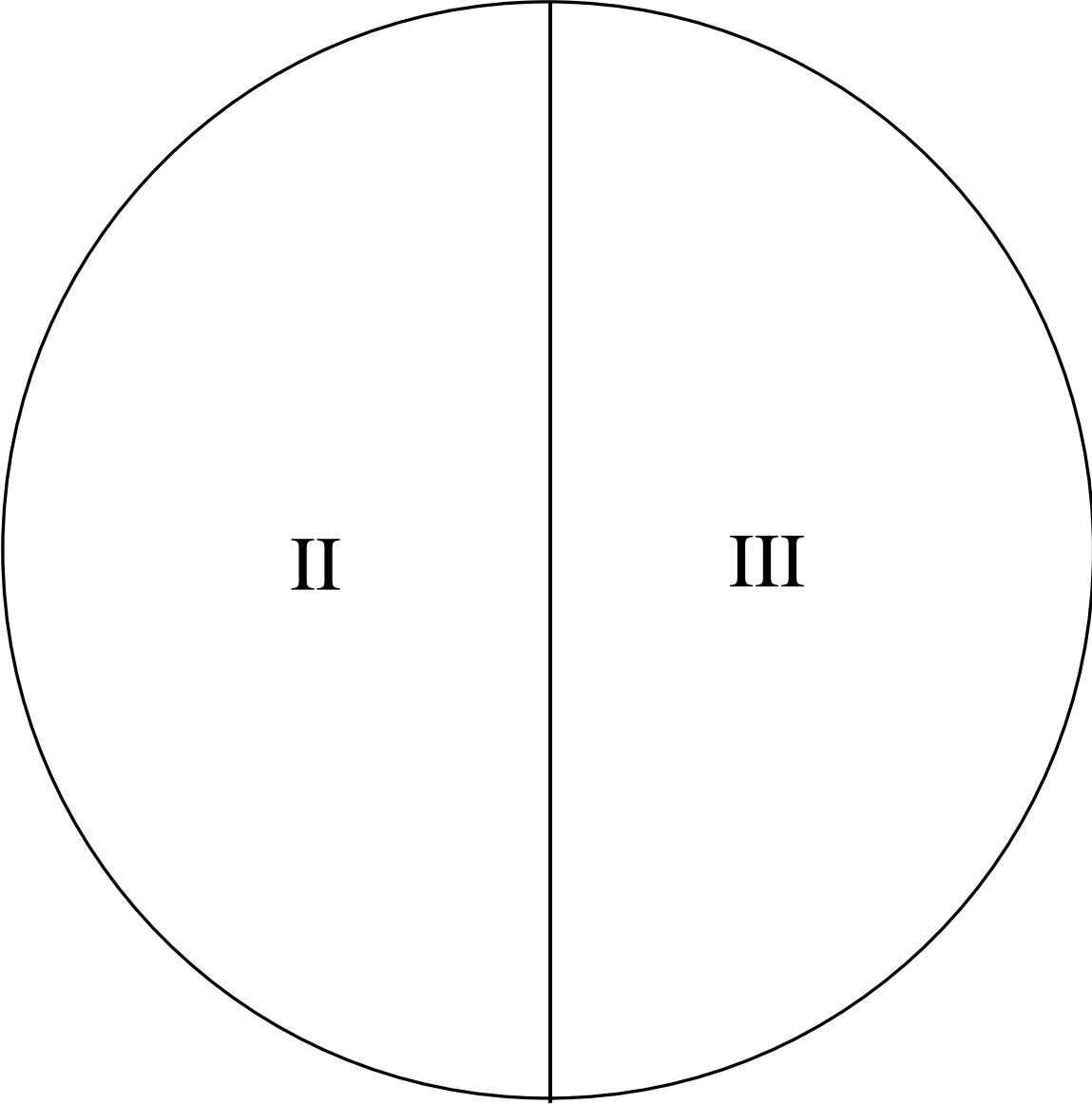
SIMPLEST BROKEN CIRCLES

This pattern is suitable for children 5-7 years old in groups of three. Sort the pieces into three envelopes (I, II, and III, as marked below) and give one envelope to each student. The summary figure given below indicates one solution; in this solution each player must give up some of his or her pieces to other players. The diagram shows how pieces held by players I, II, and III can be rearranged to form three circles. Two circles composed of a half and two quarters represents an alternative solution.



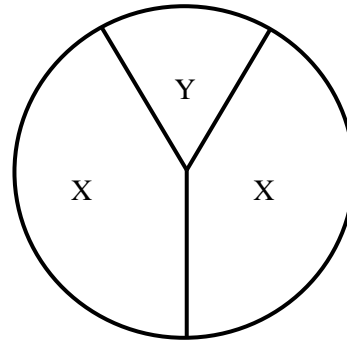
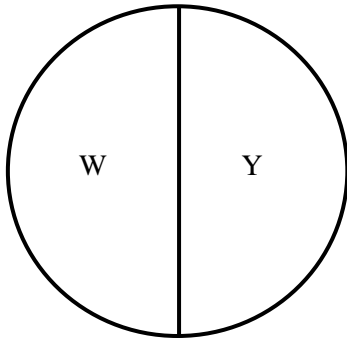
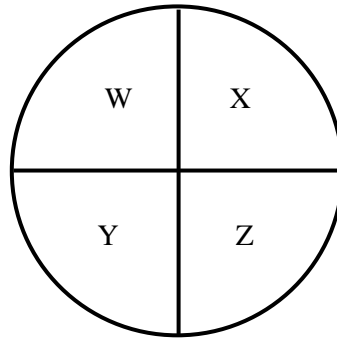
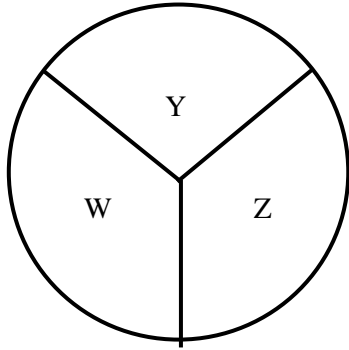


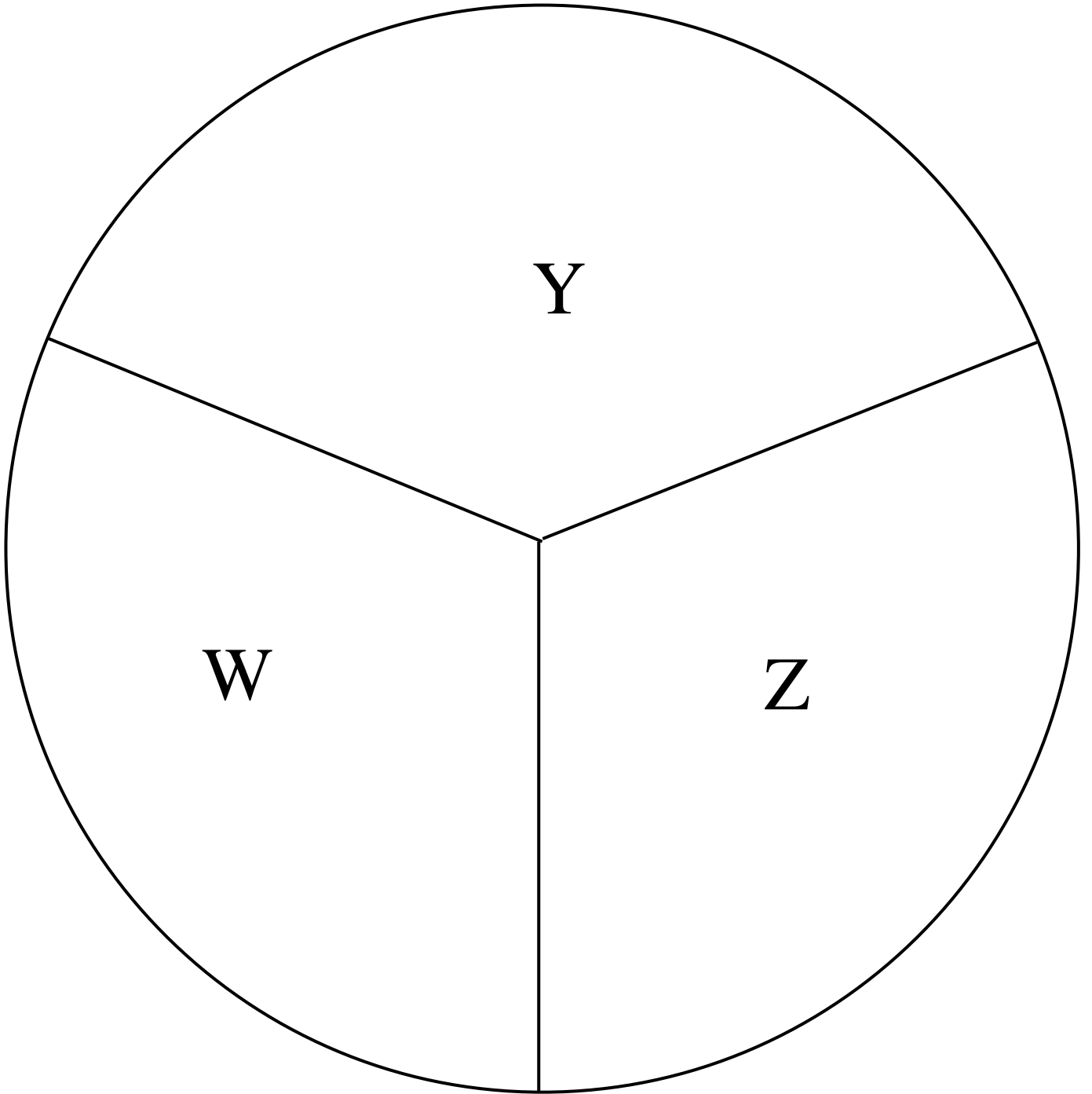


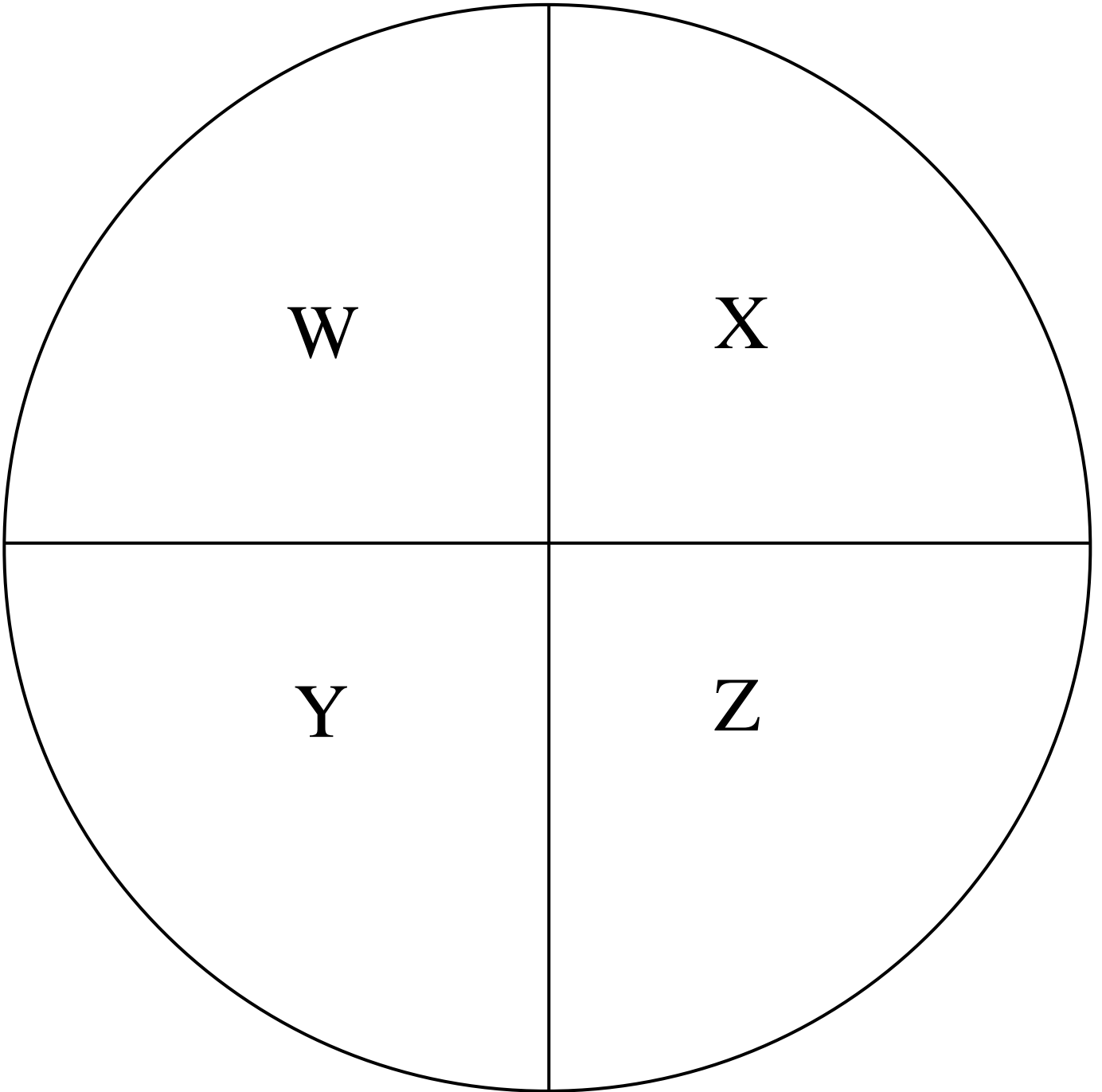


SIMPLE BROKEN CIRCLES

This pattern is suitable for children 8-10 years old in groups of four. Sort the pieces into four envelopes marked W, X, Y, and Z. The figure below indicates one solution. Ask the groups that finish first, "How many *other* ways of forming four circles can you discover?"





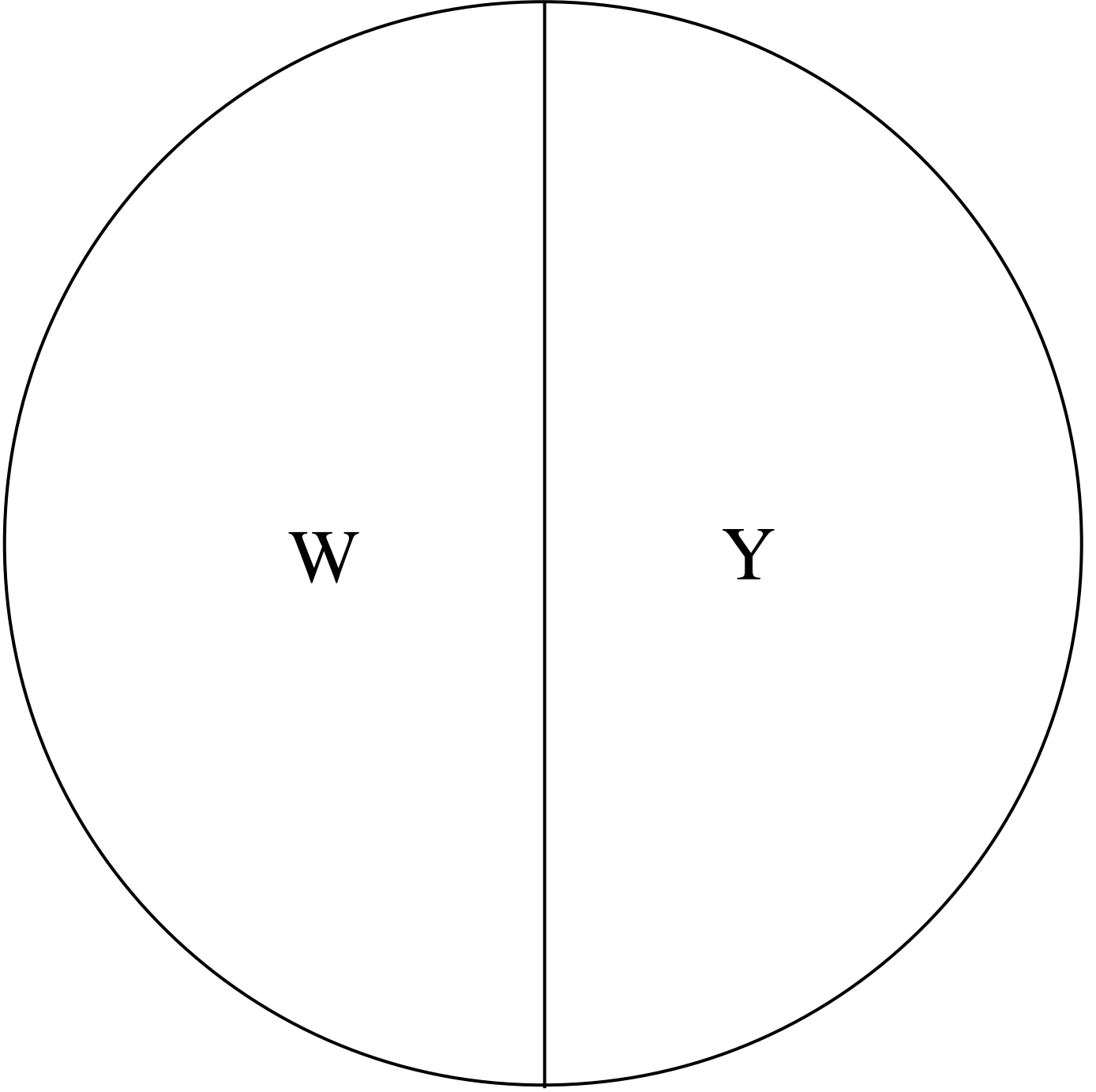


W

X

Y

Z



W

Y

