

Name(s) _____ Period _____ Date _____

Activity Guide - Unreasonable Time



Pair Raffle

Problem: For the pair raffle every participant gets a random ticket. A winning number is chosen, also at random. The problem is to determine if any pair of tickets add up to the winning number.

Example Instances:

- The tickets [108, 442, 913, 5] are drawn and a winning number of 500 is drawn. This instance does not have a winning pair because no two numbers add up to 500.
- The tickets [250, 20, 4] are drawn and a winning number of 254 is drawn. This instance does have a winning pair, 250 and 4.



How Many Checks: Fill in the table below with how many checks are necessary with different numbers of tickets. It may help to draw pictures and see if you start noticing any patterns emerge.

Tickets	Total Checks How many possible pairs are there?
2	1
3	
4	
5	
Challenge: 8	

Group Raffle Checks

Problem: For the group raffle every participant gets a random ticket. A winning number is chosen, also at random. The problem is to determine if any “group” of tickets add up to the winning number. A “group” of tickets could be one ticket that is equal to the winning number or a group of tickets that add up to the winning number. This group could have two tickets in, or all of the tickets in. They just need to add up to the winning number.



Example Instances:

- The tickets [411, 220, 710, 41] are drawn and a winning number of 1000 is drawn. This instance does not have a winning group.
- The tickets [110, 923, 475, 301, 102] are drawn and the winning number of 1500 is drawn. This instance does have a winning group, 923, 475, and 101.

How Many Checks: Fill in the table below with how many checks are necessary with different numbers of tickets. It may help to draw pictures and see if you start noticing any patterns emerge.

Tickets	Total Checks How many possible groups are there?
2	3
3	
4	
5	
Challenge: 8	