

Roll a Product Game

Date: \_\_\_\_\_

Working in a group of three. Decide who will be Players A, B, and C by putting your first names in alphabetical order. Cut the hexagons on the page and use as your game board. When two dice are rolled, there are 18 different possible products. Those products have been arranged in hexagons labeled Player A, Player B, and Player C. Take turns rolling two dice and multiplying the numbers that land face up. Mark the product in your hexagon. If a product has already been marked, you miss that turn. When all numbers in a hexagon have been marked, that player is declared a winner. Play two games. Record in the table on the board which player won each game.

Note: For this game, mark the numbers  
 1,4,9,10,25,36 in the hexagon for player A  
 2,6,12,15,18,30 in the hexagon for player B  
 3, 5, 8,16, 20, 24 in the hexagon for player C

Activity #1

- a) To help you understand whether the game is fair, fill in these tables and record the number of times each product occurs.
- b) Record the overall number of games A,B, and C won in the class.
- c) Based on the class results, do you think the game is fair? \_\_\_\_\_

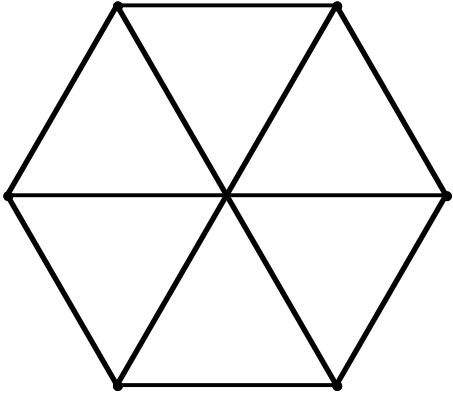
Possible Products of Two Dice Chart

x	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

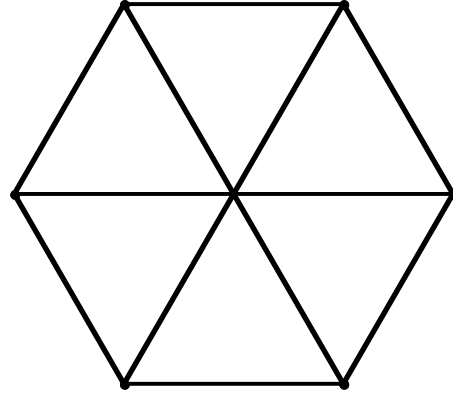
Product	Number of Ways to Roll
1	
2	
3	
4	
5	
6	
8	
9	
10	
12	
15	
16	
18	
20	
24	
25	
30	
36	
Total:	

Activity #2

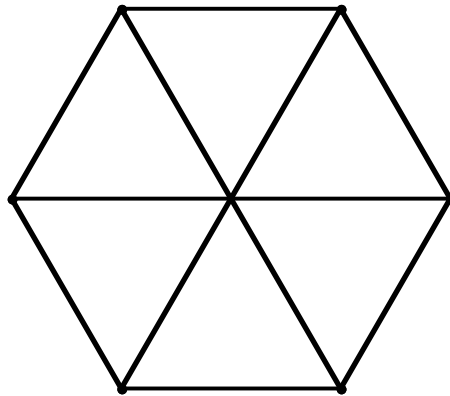
- a) What should be the probability be for each player if the game is to be fair? Explain.
- b) Use your discoveries to create three hexagons, each of which is equally likely to win.



Player A



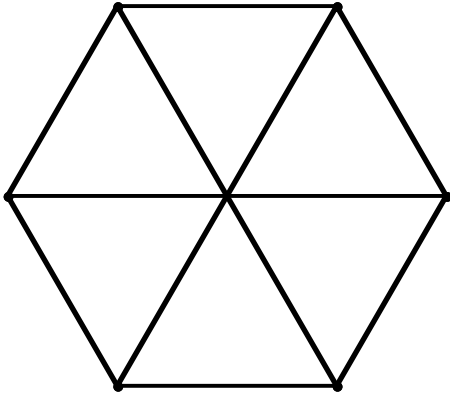
Player B



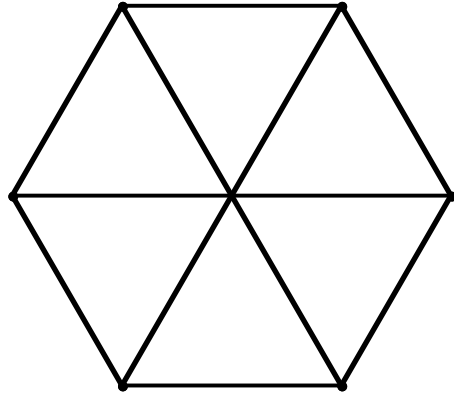
Player C

- c) Do you think there is more than one way to create a fair game? Explain.
- d) Just because a game is fair, does that actually mean each player will win exactly the same number of times it is played? Explain.

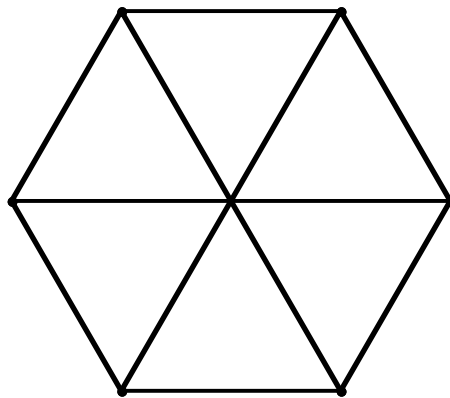
Game Board- Mark the numbers shown on the first page on the game boards below and play.



Player A



Player B



Player C