Name_____ Period _____ Date _____

Zero Sum Security

Lesson 3: Distributed Evenly
Distributing security officers to protect passengers is a great strategy. A problem is that whenever you add a guard to a new area, you are also removing them from their previous post. Finding the right balance is the key to success. Will you be successful in providing protection to the passengers?

Doing the Science
1.   Start the Zero Sum Security Simulation by clicking on the "Sim" tab.
2.   Read the threat provided on the screen.
3.   Click on "Run" to view the default setup's security and annoyance levels. Click on "Personal Craft", "Cargo Ships", "Cruise Ships", and "Overall" to view the security and annoyance level for each category. Record these levels into Table 1 below.
4.   Count and record the number of guards in each area into the table.
5.   Count the total number of guards and divide that number by 3.
6.   Place the number of security guards from step 5 into each type of ship area. Don't forget the boardwalk and white walkway areas as well. If there are extra guards, you can put them on the police boat to guard the water.
7.   Click on "Run" and record the security level, annoyance level, and number of guards in each of the type of ship into "Distributed Evenly".

Table 1.

Security Guard Setup	Type of Ship	Security Level	Annoyance Level	Number of Guards				
				Entry	Luggage or Cargo	Board-walk	White Walkway	Ocean
Default Setup	Personal Craft							
	Cargo Ships							
	Cruise Ships							
	Overall							
Distributed Evenly	Personal Craft							
	Cargo Ships							
	Cruise Ships							
	Overall							

Do You Understand?
1.   How were the security and annoyance levels of the default setup compared with those of the evenly distributed security guards?

2.   Is an even distribution better than a distribution based on priority? Explain.