

Equations of Attack

NAME _____

Questions

1. As you play the game, write equations for each of your lines that sunk your opponent's ships.
2. If you did not sink all of your opponent's ships, write equations that would sink the ships that are still afloat.
3. Explain the strategy you used for choosing your cannons. Do you think your strategy is the best possible strategy? Why?
4. Explain how you could tell that your equation would sink an enemy ship without graphing.



Rules of the Game

1. Flip a coin to determine who gets to place the first ship and gets to choose whether he/she gets the even or odd cannons.
2. Each player should choose one color to represent his/her fleet. One player (decided by the coin toss) places the first ship by drawing a large dot on the board. Then, the other player places the second ship. Continue placing ships until each player has five ships on the board.
Note: Ships can only be placed at lattice points (where both the x - and y -coordinates are integers). For example, you can place a ship at $(4,5)$, but you can't place a ship at $(4.5,5)$ or $(4,5\frac{1}{3})$. Also, ships cannot be placed along the y -axis.
3. Each player will have five cannons along the y -axis. One player will have all the even cannons $(0, 2, 4, 6, 8)$, and the other player will have the odd cannons $(1, 3, 5, 7, 9)$, as determined by the initial coin toss. Mark your cannons with X 's using your color.
4. It's time to play! The player with the even cannons goes first. Draw a slope card from the face-down deck. Choose any of your five cannons to shoot from. Draw a line from the cannon you chose in the direction determined by your slope. If you hit an opponent ship (or more than one), the ship is sunk!
5. Play alternates until all of one player's ships are sunk. The first player to sink all opponent ships is the winner!

Game Board

