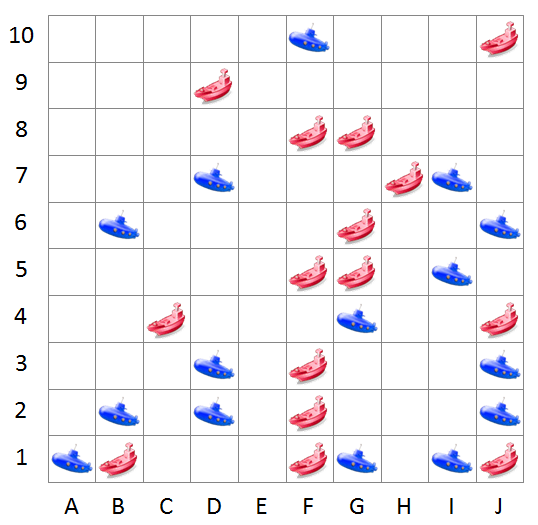
**April 2013 - Subs vs. Battleships**



Naval warfare is a complicated undertaking due to the varying capabilities and vulnerabilities of both friendly and enemy ships.  Deciding who should attack who is a critical decision that can determine the outcome of the battle.

Figure 1 shows a map of 15 blue, friendly submarines and 15 red, enemy battleships.  Your goal is to move each submarine so that it occupies the same cell as a battleship.  When a submarine occupies the same cell as a battleship, the battleship is destroyed.  Each submarine can only destroy one battleship.  Battleships cannot move.

Use Pythagorean theorem to calculate the distance between cells.  For example, the distance between cells A1 and B3 is 2.236 km.

**Question:  What is the minimum total distance the submarines need to travel to destroy all of the battleships?**