

Habits of Mind #10

MENSA

The following questions appeared on a MENSA quiz that appeared in an airline “flight magazine”. Can you answer them? Explain each answer.

- (1) A cube measuring four inches on each side is painted blue all over and is then sliced into one-inch cubes. How many of the smaller cubes are blue on three sides?
- (2) Sammy Johnson has two sisters, but the Johnson girls have no brother. How can this be?
- (3) When purchased together, the total price for a pair of binoculars and the case is \$200. If the binoculars cost \$180 more than the case, how much does the case cost?
- (4) If you have three points in space, and if the three points do not lie on the same straight line, then three points determine a unique plane. Start with four points in space that do not lie in the same plane. Connect three points at a time to determine a plane. This gives you four different planes. What is the maximum number of lines that will result from all possible intersections of two planes?
- (5) If 4,096 people entered a statewide, single-elimination, singles tennis tournament, how many total matches would be played, including the championship match?

Due Date: At the beginning of class on Wednesday, November 17.