

Ice Cream!!!!

For the solution to this problem and the contents of today's presentation, please visit www.vincematsko.com and click on Riga 2010.

Click on IMSA, then APS to see the course website for Advanced Problem Solving. You will find a selection of Problem Sets there.

WARNING: Your head may explode if you try to solve this problem.

Problem solving isn't just for IMSA students! Six logical friends – Arlen, Boris, Cecil, Doran, Edith, and Frank – having just finished some pretty hairy logic problems, decided to go to Wacky Jack's Primo Ice Cream Emporium to celebrate. Each ordered their ice cream in a waffle cone or a dish, except for the one who ordered the Slurp-A-Licious Bucket-O-Yum – a delectable concoction with two scoops each of Jack's five Specialty Flavors – in which case it came in a commemorative Wacky Jack Bucket (which you got to keep if you ate it all). From the following clues, can you decide who ordered what? NOTE: All solvers made their selections from Jack's five Specialty Flavors: Blueberry Farkle, Chocolate Smudge, Marshmallow Whoop, Pecan Passion, and Peppermint Blast. For the cones, you must specify the order of the scoops.

NOTE: The rest of this page is blank so that all the clues fit on the back of this page.

1. No cone had more than three scoops of ice cream, and no dish had more than five.
2. Except for the problem solver who got the Slurp-A-Licious Bucket-O-Yum, no one got more than one scoop of the same flavor.
3. The number of scoops in Edith's dish was the same as the sum of the numbers of scoops in Arlen's and Cecil's cones.
4. Cecil and Edith together had the same number of scoops as Arlen and Frank together.
5. If Frank had an even number of scoops, then there were 23 scoops among the six solvers.
6. If Frank had an odd number of scoops, then there were 25 scoops among the six solvers.
7. If Boris had an odd number of scoops, then Edith had an even number.
8. Boris had fewer scoops than Doran.
9. Exactly two solvers had exactly three scoops of ice cream.
10. Frank ordered a dish if and only if Boris ordered a cone.
11. Arlen had three scoops of ice cream if and only if no two cones had the same number of scoops.
12. Exactly four solvers had Marshmallow Whoop, exactly four had Pecan Passion, and exactly two had both.
13. Either Arlen's flavors were a subset of Edith's, or Frank's were a subset of Cecil's.
14. Frank did not order Pecan Passion, and Cecil did not order Marshmallow Whoop.
15. If Cecil ordered just one scoop, then Arlen ordered Pecan Passion.
16. Boris and Doran were the only two to order Peppermint Blast.
17. Arlen and Frank had no flavors in common if and only if Boris and Frank had exactly one flavor in common.
18. Two cones had a scoop of Chocolate Smudge second from the top.
19. Frank had exactly two scoops if and only if Pecan Passion was always the bottom scoop of the cone it was on.