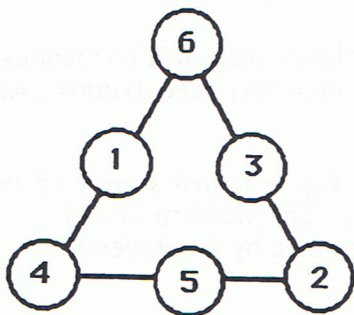


# Commentary

Earth, X

1. (1979) Subtract 16 from 1995 and get 1979. Or, a student might be successful by counting backwards 16 times from 1995.
2. (6,528) This problem can be solved using the "guess-check-revise" method, using the numbers given: 2, 5, 8, and 6. Students might put these four numbers on index cards, and physically move them around until they find the right combination. The number has to begin with 6, so that card would stay stationary while the student moves the other three.
3. (a. 7; b. 15) In part (a), note that the graph is shaded halfway between 6 and 8, so there are 7 that like raspberry. In part (b), 5 second graders like lemon and 10 like strawberry for a total of 15. Students who have not seen graphs in which all the numbers are shown on the bottom axis might have difficulty with the problem for that reason.
4. (9 and 12) There are several ways to approach this problem. One way is to use "guess and check" until you have the correct pair of numbers. Another way is to make a list of pairs of numbers that equal 21:  
1 + 20 4 + 17 7 + 14 10 + 11  
2 + 19 5 + 16 8 + 13  
3 + 18 6 + 15 9 + 12 -- only this pair differs by 3
5. (see below) Some students may use "guess and check" until they find the right combinations for 11. Note that the three sides of the triangle can be switched around.



6. (c should be circled) Notice that the last figure has 4 vertices (points where the paths meet), and each has an even number of paths coming out of it. Networks such as these are *traceable* if they have exactly 0 or 2 odd vertices. This network has 0 odd vertices, since all four vertices have an even number of paths coming out of them.
7. (6) Students can see that a stapler weighs 12 grams from the smaller scale. Therefore on the larger scale, the two staplers weigh 24 grams. Since the entire weight is 30 grams on the big scale, the ball must weigh the difference between 30 and 24, which is 6.
8. (15 + 8 = 23 or 18 + 5 = 23) Students can again take five index cards, but this time label them =, 5, 1, 8, and +, and arrange them to give 23 as an answer.