Commentary

Jupiter, III

1. **(The diagonal from upper left to lower right should be ringed.)** Give students one star for having all the correct products in the chart, and another for the correctly-ringed diagonal.

2. **(12)** The ratio of 48 to 60 is the same as the ratio of 24 to 30, or 12 to 15, or 4 to 5. He would get the most bags possible by working with the 4 to 5 ratio, putting 9 items in each bag. This would give 12 bags, as 12 x 4 is 48 and 12 x 5 is 60.

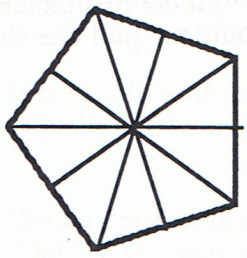
3. **(1:00)** The only difficult part of this problem comes if students try to compute 10:45 + 2:15, because they are not in the decimal system with time. The sum of 10:45 and 2:15 is 12:60, which is 1:00. Students with good number sense will likely "count on" from 10:45, using hours and then quarter hours.

4. **Green Black Yellow**
   Red Blue Orange
   Students can be encouraged to solve such logic problems by making a chart, and proceeding by process of elimination.

5. **($4)** Students should have an intuitive feel for this type of problem, rather than subtracting $11.15 from $15.00, and rounding the answer. They should know that $11.15 is close to $11, and $15 - $11 is $4.

6. **(a. 6; b. 63)** 64 play, then the 32 winners of those matches play, then the 16 winners of those matches play, then the 8 winners of those matches play, then the 4 winners of those matches play and finally the last two winners play. This is 6 rounds of golf, and the winner must play in all of those. Since there are 63 losers, and each had to play a match to lose, there are 63 matches altogether.

7. There are 5 such lines of symmetry, as shown below.



8. **(3,897)** There are several clues that make this *guess-check-revise* problem a little friendlier. Since the sum of the four digits is 27, the average size of the digits must be fairly large. However, the *thousands* digit has to be either a 1, 2, or 3, while the corresponding *tens* digit is a 3, 6, or 9. Pick the 3 to begin the search, using 9 for the *tens* digit, and make the last digit a 7 since that's the largest odd digit not already used. This gives a sum of 27, as required, if 8 is the *hundreds* digit.