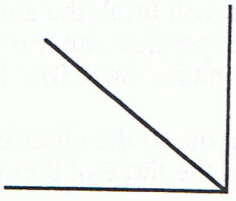
Commentary

Jupiter, XI

1. **(The fold line should divide the corner in two equal parts as shown below.)**

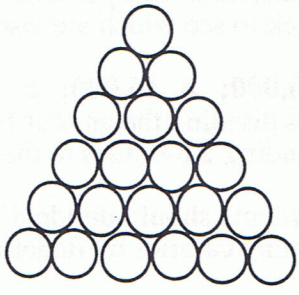


2. **(8)** The fractions are either close to 0 or close to 1. The mixed numbers can then be rounded to produce the following whole number computation: $4 + 3 - 2 + 6 - 3$, which gives 8.

3. **(6)** Calling the three students A, B, and C, there are 6 ways: ABC, ACB, BAC, BCA, CAB, and CBA

4. **(10, 15)** The problem involves simply counting. The next two problems build on this one.

5. **(See the shape to the right.)**



6. **(55)** The number of circles makes the familiar pattern: 1, 3, 6, 10, 15, 21, 28, 36, 45, 55, ... To get each succeeding term, you add one more than what you added in the previous term. To get from 1 to 3, you add 2 to 1. To get from 3 to the next number, you add 3. To get the next term, you add 4, then 5, then 6, and so on.

7. **(a. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47; b. 15 out of 49 or 15/49 or any equivalent; c. no)** The probability of picking a number that is not prime is 34/49.

8. **(a. < ; b. < ; c. =)**

9. **(From the left, the 1st, 3rd, and 5th figures should be circled.)** The first figure has two square faces at its ends. The third figure also has two square bases, although they are "tilted". The fifth figure has only one square face, the one on which it rests.

10. **(25)** The problem will become, in later years, an algebraic situation of the form $60 = 2x + 10$. In this case, the two tubes of glue must weigh 50 grams since $50 + 10 = 60$. If two tubes of glue weigh 50, then each weighs 25.