Commentary

Mars, XIX

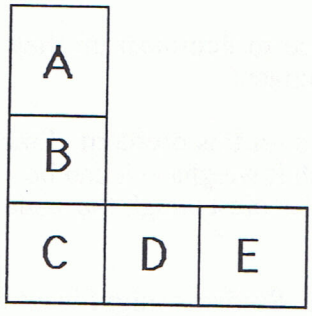
1. **(a. 95; b. 98)** The student can use subtraction to find both missing numbers. Or the student might add-on to the smaller number, to get the larger number, and keep count of how much was added.

2. **(Sally is 6 yrs; Joan is 24 yrs.)**The student can solve this problem by building on the fact that Tara is 12. If Tara is double Sally's age, then Sally's age is $12 \div 2 = 6$. If Joan is double Tara's age, then Joan's age is $12 \times 2 = 24$.

3. **($3.96)** The student can add the tax of 7¢ to $1.25 to get $1.32 for each popcorn box, and then add this amount 3 times or multiply by 3. A student might decide to find 3 times $1.25 and then add the tax of 21¢.

4. **(The box is heavier.)** Solving the problem requires intuition about a balance scale, but this same intuition will help in algebraic thinking. The student can see that the ball is on both sides of the scale, and therefore the ball can be removed and the scale will stay balanced. This means that a box balances two pyramids. Therefore a box is twice as heavy as a pyramid, which will seem strange to some students because there is an *inverse* relationship between the number of items of each, and the relative weights.

5. **(11 rectangles)** Labeling the rectangles and listing them will help the student find them all as shown below:



A, B, C, D, E; CD, DE, CDE; AB, BC, ABC

6. **(Greatest: 84 + 62 or 82 + 64 = 146 ; Least: 46 + 28 or 26 + 48 = 74)** The student should place the largest numbers in the ten's place for the largest sum. The student should place the smallest numbers in the ten's place for the smallest sum.

7. **(8)** Reading the problem carefully is a key to success. When 4 is subtracted from 12, the answer is 8. If 8 is subtracted from 16, the answer is also 8, so the secret number is 8.

8. **(26, 35, 40)** The student might reason that for a score of 101, some of the large numbers need to be chosen. If the student starts with the 2 largest numbers -- 35 and 40, which is 75 -- then 26 is needed to reach 101. Some students might solve the problem simply by *guess-check-revise*.