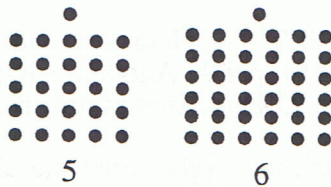


# Commentary

Jupiter, X

1. (See figures below) Note that each figure is a square with the same number of dots on each side as the figure number, plus an extra dot on top.



2. (a. 101; b. 20;  $n \times n + 1$ ) This problem encourages students to generalize the number of dots for each figure, rather than drawing them. Each figure is made from this number of dots: the figure number, squared, with 1 dot added on top.
3. (14) If the mother and one pup weighed 15 pounds, and the mother and two pups weighed 17 pounds, then the extra pup in the second weighing must be 2 pounds. Since all the pups are the same weight, 7 pups would weigh 14 pounds.
4. (See below.) There are other solutions. Students may use *Guess-Check -Revise*.

6	1	8
7	5	3
2	9	4

5. (168) Multiply 7 by 24.
6. (b) Students might use a calculator for this problem. For plan (a), you would earn \$55; for (b), you would earn \$102.30; for (c), you would earn \$60. Students are often surprised at how quickly an amount becomes, when doubled continuously.
7. (4)
8. (Mom) Students might take out a deck of cards and count the possibilities. Aces, face cards, and hearts when counted so they aren't counted twice, make up 25 of the 52 cards in the deck. The other cards, 2 through 10 of spades, diamonds, and clubs, would be 27 of the 52 cards. Since  $27/52$  is a better chance than  $25/52$ , Mom has a slight advantage. But not much.