

1. $\boxed{16 \text{ -OR- } 25}$
2. Students are lined up in a 10 by 10 square formation so there must be $\boxed{10}$ students on each side.
3. Since there are 4 corners, there are $44 - 4 = 40$ flags that are placed not in the corners. This means there are $40 \div 4 = 10$ non-corner flags on each side. But there are 2 corner flags on each side, so each side has $10 + 2 = \boxed{12}$ flags.
4. The perimeter of the garden is 40 meters. If the roses are planted 1 meter apart and one on each corner then there must be $\boxed{40}$ roses.
5. There are 5 cheerleaders on each side of the square. Of those 2 of them must be standing on corners. That means there are $5 - 2 = 3$ cheerleaders on each side that are not standing on corners. Then there are $3 \times 4 = 12$ cheerleaders not standing on corners, for a total of $12 + 4 = \boxed{16}$ cheerleaders total.
6. This means the perimeter is 120 meters (counting one at each end). Then each side is $120 \div 4 = \boxed{30 \text{ meters}}$ long.
7. There are 169 musicians, forming a 13×13 square (indeed, $13 \times 13 = 169$). This means there are $\boxed{13}$ musicians on each side of the square.
8. Each side of the cake has 7 flags. Of those, 2 are corner flags so $7 - 2 = 5$ are non-corner flags. That means there are a total of $5 \times 4 = 20$ non-corner flags on the cake. The total number of flags on the cake is $20 + 4 = \boxed{24}$.
9. Troy has 5 left over marbles and still needs another 10 marbles to form an extra row and column. This means he needs a total of $10 + 5 = 15$ marbles to form an extra row and column. The number of marbles needed to form an extra row and column must be the same as twice the number of marbles on one side of the original square plus one extra for the corner. This means one side of the original square formation must have $(15 - 1) \div 2 = 7$ marbles. This tells us that the original square formation was 7×7 , or 49 marbles. Add the extra 5 and you get $49 + 5 = \boxed{54}$ marbles.
10. Using similar reasoning as problem #9, Ethan requires a total of $32 + 49 = 81$ quarters to form one extra row and column. This means each side of the original large square formation must have $(81 - 1) \div 2 = 40$ quarters on each side. The original large square formation was 40×40 , or 1600 marbles. Add to that the extra 32 and Ethan has $1600 + 32 = \boxed{1632}$ quarters.