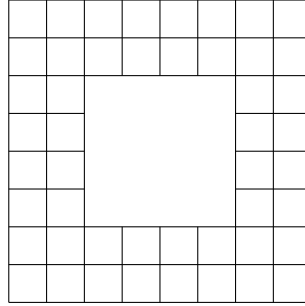


3.2 Basic counting practices (part 5)

1. How many squares are determined by the grid lines shown below if the 48 smaller quadrilaterals are congruent squares?



2. A $5 \times 5 \times 5$ wooden cube is painted blue on all faces and then broken up into 125 smaller cubes. How many of these smaller cubes are painted on 0 faces? 1 face? 2 faces? 3 faces? 4 faces?
3. What is the maximum number of points of intersection among 2 circles, a square and 3 lines?
4. Bob has a choice of toppings for his ice cream. He must choose one of caramel, hot fudge, and marshmallow, two of pecans, walnuts, and almonds, and three of strawberry, M&Ms, Butterfinger, sprinkles, and Snickers.
 - (a) How many different ice cream cones could he get?
 - (b) Bob decides that he does not want to get both walnuts and caramel at the same time. How many different ice cream cones could Bob get?
5. How many different 5-letter codes can be made by using each of the letters in the word HELLO exactly once?