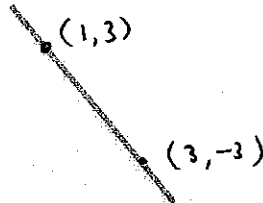


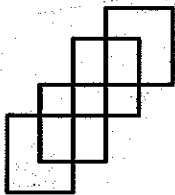
Show your method of solving clearly and state your answer in a complete sentence.

1. A line passing through the two points shown will intersect the y-axis at \_\_\_\_?

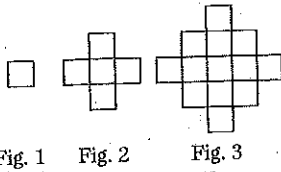


2. A convex polygon with  $n$  sides has 5 times as many diagonals as sides. Find the value of  $n$ .

- 
3. What is the total number of rectangles (of any dimension) in the figure?



4. The first three figures of a sequence are shown. Figures 1, 2, and 3 are composed of 1, 5, and 13 squares, respectively. If this pattern continues, what number figure will have 421 squares?



5. A train, traveling at a constant speed, takes 20 seconds from the time it enters a 300 foot long tunnel until it completely emerges from the tunnel. One of the stationary lights in the tunnel is directly above the train for 10 seconds. Find the length of the train.



6. Three tangent circles, each with a radius of 1 unit, are surrounded by a larger circle that is tangent to all three smaller circles. What is the radius of the larger circle?