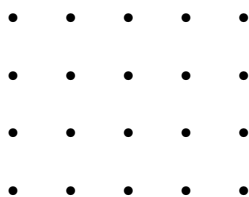


Target Practice 1

1. Two points are simultaneously and randomly selected from a 4×5 grid of 20 lattice points. What is the probability that the distance between them is $\sqrt{5}$? Express your answer as a fraction.



2. In triangle ABC , the measures of $\angle A$, $\angle B$, and $\angle C$ form an arithmetic sequence. If $\angle A$ is exactly half as big as $\angle C$, what is number of degrees in $\angle C$?
3. A rectangular box has dimensions 5 inches by 7 inches by 11 inches. Two bugs are at opposite corners of the box, as far away from one another as possible. To the nearest integer, how far apart are they?
4. The sum of two numbers is 7 and their product is 8. Find the sum of their reciprocals.
5. How many noncongruent acute triangles have integer sides and perimeter 12?
6. A cube has edges of length 6 units. What is the distance from the midpoint of a face diagonal to the vertex farthest away? Leave your answer in simplest radical form.
7. If $x + y = 3$ and $xy = 1$, what is $x^3 + y^3$?
8. The number 75 is expressible as a sum of four numbers a, b, c , and d in such a way that the same number results when 4 is added to a , when 4 is subtracted from b , when 4 is multiplied by c , and when 4 is divided into d . Find a, b, c , and d .
9. Suppose r is a positive root of $x^2 - 7x = 1$. Find the distance between r and its reciprocal.
10. What is the total number of rectangles of all sizes in the diagram?

