



## Coordinate Geometry

### About These Problems

Coordinate geometry refers to problems where figures are given in a 2 or 3-dimensional coordinate system. Based upon random points of the figure you will be asked to determine the area or volume. The trick to these problems is ignoring the coordinate system and treating it as a regular polygon with side lengths and height.

**Question.** If a cube is depicted in a 3 dimensional coordinate system, and has points (0,0,0) (4,0,0) (0,4,0) (4,4,4) and (0,0,4). What is the length of the diagonal of the cube?

1. 6.93
2. 5.51
3. 16
4. 12.1
5. 15.1

**Answer. 1:**

The diagonal of the cube is the distance from the opposite corners in 3 dimensions. The distance from (4,4,4) to (0,0,0) is:

$$(4^2 + 4^2 + 4^2)^{(1/2)} = 6.93$$