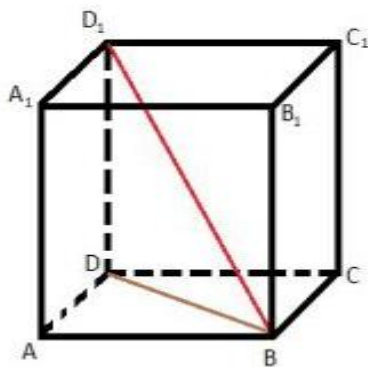# Answer on Question #61610 - Math – Geometry

Question

Find the distance, in inches, between two vertices of a cube that are farthest from each other if an edge measures 10 inches.

Solution

We need to find the distance between B and D_1.

Let's find DB using the Pythagorean theorem:

$$DB = \sqrt{AD^2 + AB^2} = \sqrt{100 + 100} = 10\sqrt{2}$$

Let's find BD_1 using the Pythagorean theorem:

$$BD_1 = \sqrt{DB^2 + DD_1^2} = \sqrt{200 + 100} = 10\sqrt{3}$$

The distance between B and D_1 is $10\sqrt{3}$ in.

Answer: $10\sqrt{3}$ in.