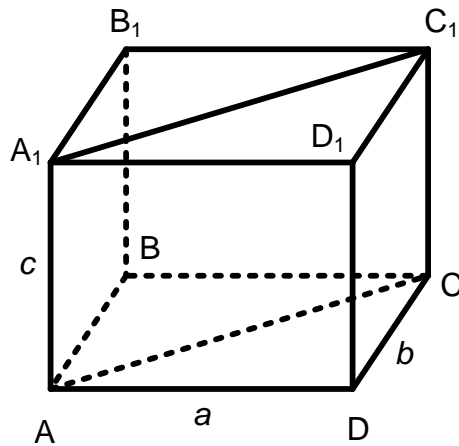


Answer on Question #57585– Math – Geometry

Question

Given a rectangular Parallelepiped with base a by b and altitude c. Find the area of the section which contains two diagonally opposite edges of the parallelepiped.

Solution



We must find area of AA_1C_1C

Given AA_1C_1C is a rectangle, so its area is

$$A_{AA_1C_1C} = AA_1 \cdot AC$$

Given $\triangle ADC$ is a right triangle, so

$$AC = \sqrt{a^2 + b^2}.$$

Thus, area of AA_1C_1C is equal to

$$A_{AA_1C_1C} = AA_1 \cdot AC = c\sqrt{a^2 + b^2}.$$

Answer: $c\sqrt{a^2 + b^2}$.