

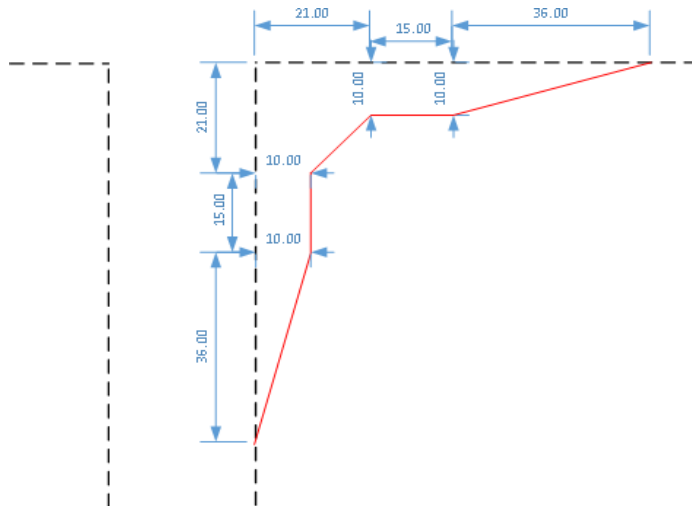
# Classroom to Campus: Math and Stats Challenge

## Grade 11 – MBF3C

### Topic C: Geometry and Trigonometry

#### Calculating Land Acquisition Costs for Road Expansion

The local government is planning to expand a busy intersection to accommodate increasing traffic and improve safety. The area of land to be acquired is essential for creating an additional lane and improving pedestrian crossings. The project involves widening the road from the right corner, which requires purchasing a piece of privately owned land adjacent to the intersection (the area between the broken line and red line). The price of the land is \$247.16 per squared metre.



All measurements are in decimetres

- Determine the total area of land that needs to be purchased. (Round your final answer to two decimal places. Include units.)
- Calculate the total cost to purchase the land. (Round your final answer to the nearest cent.)
- If the price per square metre increases by 10% due to rising property values, what would be the new cost of purchasing the land? (Round your final answer to the nearest cent.)

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