

Classroom to Campus: Math and Stats Challenge

Grade 10 - MFM2P

Topic A: Measurement and Trigonometry Cost Analysis for Residential Driveway Construction

Sunny Path Construction specializes in creating durable and cost-effective driveways for residential homes. A homeowner requires a concrete driveway with a rectangular form, large enough to accommodate multiple vehicles, measuring 17.5 metres in length and 6.8 metres in width. Sunny Path designs the driveway as fourteen separate concrete pads, each measuring 3.4 metres by 2.5 metres with a thickness of 0.2 metres. The project includes calculating material requirements and total costs to provide the homeowner with a detailed estimate.

- Determine the total area (in squared metres) of the driveway. *(Round your final answer to two decimal places. Include units.)*
- Determine the total volume (in cubic metres) of concrete required for the fourteen concrete pads. *(Round your final answer to two decimal places. Include units.)*
- If the cost of concrete is \$206.35 per cubic metre, what is the total cost of the concrete required for the driveway installation? *(Round your final answer to the nearest cent.)*
- If the labour cost is \$104.45 per square metre of area covered, what is the total labour cost for the driveway installation? *(Round your final answer to the nearest cent.)*
- Concrete Solutions Inc. charges a fixed cost of \$10 000, a daily charge of \$7500, and is expected to complete the work in 4 days. Determine the difference in cost of concrete per cubic foot between this company and Sunny Path Construction. *(Round your final answer to the nearest cent.)*

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