***MPM1D CARDBOARD PRISMS – CALCULATING COST*** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The cardboard prism you need to build requires the following materials:

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| Cardboard | Noodles | Edge Glue | Dab Glue | Labour |
| 1200 cm2 | 1450 mL | 85 cm | 6 wall braces (each brace has 2 dabs) | Will take an hour and a quarter |

Calculate the cost to build the prism for each of the 4 countries below. In all cases, you only need to pay for the materials you use (eg. If you only need half a stick of glue, you don’t need to pay for the entire stick).

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| **TANZANIA** |
| 1. Cardboard

🡪 Cardboard costs $0.0025 per square cm | 1. Noodles

🡪 Noodles cost $0.75 per L | 1. Glue

🡪 For edges: it costs 2 cents per cm of edge 🡪 For dabs: each dab costs 5 cents  | 1. Labour

🡪The builder is paid $5/hour |

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| **MONGOLIA** |
| 1. Cardboard

🡪 Cardboard costs $1.50 for a piece measuring 500 square cm | 1. Noodles

🡪2 L of noodles cost $3.50 | 1. Glue

🡪 a glue stick costs $1.25🡪 each glue stick can do 50 cm of edge, or 10 dabs | 1. Labour🡪 The builder is paid $275 for their 40 hour work week
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| **NICARAGUA** |
| 1. Cardboard

🡪 A piece of cardboard measuring 50 cm x 80 cm costs $5 | 1. Noodles

🡪 The first half litre of noodles costs $1.40. 🡪 After that, noodles cost $1.80 per litre | 1. Glue

🡪A dozen glue sticks costs $5.50🡪 Two glue sticks are required to join 1 foot of edges🡪 One glue stick can be used for 25 dabs | 1. Labour

🡪The builder insists on getting paid 20% more than the Ontario minimum wage |

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| **FIJI** |
| 1. Cardboard

🡪 A cardboard sheet measuring 2 feet by 3 feet costs $25🡪 Add 15% of the required cardboard amount for wastage | 1. Noodles

🡪 Noodles cost $5 per kg🡪 One scoop of noodles weighs 40 g and has a volume of 74 mL  | 1. Glue

🡪 Glue costs $6.60 per pound🡪 a 7 g stick of glue is enough for 25 cm of edge, or 12 dabs | 1. Labour

🡪 The builder demands US$500 for a 40 hour work week🡪 you still need to pay in Canadian $ |

*Some common conversions. You can look up others as needed, but state any conversion rates you use.*1 inch = 2.5 cm (approx.) 1 cm3 = 1 mL 1 foot = 12 inches 1 kg = 1000 g 1 dozen = 12 items
1 m = 100 cm 1 m = 3.3 feet (approx.) $1 = 100 cents 1L = 1000 mL 1 pound = 454 g

ANSWERS

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| --- | --- | --- | --- | --- | --- | --- |
| Country | Cardboard ($) | Noodles ($) | Edge Glue ($) | Dab Glue ($) | Labour ($) | Total ($) |
| Tanzania | 3 | 1.09 | 1.7 | 0.6 | 5.75 | 12.14 |
| Mongolia | 3.6 | 2.5375 | 2.125 | 1.5 | 7.91 | 17.67 |
| Nicaragua | 1.5 | 3.11 | 2.6 | 0.22 | 19.32 | 26.75 |
| Fiji | 6.39 | 3.92 | 0.35 | 0.1 | 18.69 (using exchange rate of 1.3) | 29.45 |