Ice Cream & Packaging Math Challenge

Description

This assessment evaluates problem-solving skills in quantitative mathematics through real-world scenarios.

It includes:

* A combinatorics problem involving counting possible combinations of items.
* A geometry and measurement problem estimating the dimensions of a package.

  Both questions are aligned with the Quantitative Math curriculum and require logical reasoning, basic arithmetic, and interpretation of tabular and spatial information.

## Ice Cream Cone Combinations

@title Ice Cream Cone Combinations

@description Calculate the total number of different ice cream cone combinations possible.

@question

A dessert shop sells ice cream cones by pairing 1 type of cone with 1 flavor of ice cream. The table shows the available cones and flavors. How many unique ice cream cones can be made?  
  
## Ice Cream Choices  
  
| Cone Type | Flavor |  
| :---: | :---: |  
| Waffle | Vanilla |  
| Sugar | Chocolate |  
| Cake | Strawberry |  
| Pretzel | |

(Image suggestion: Table showing cone types in one column and ice cream flavors in another, styled like the original assignment example.)

Choices:

* (A) Three
* (B) Six
* (C) Seven
* (D) Nine
* (E) Twelve

@instruction Choose the correct total number of unique combinations.

@difficulty easy

@Order 1

Options:

@option Three

@option Six

@option Seven

@@option Nine

@option Twelve

@explanation

There are 4 cone types and 3 flavors, giving 4 × 3 = 12 possible combinations. However, the Pretzel cone has no flavor option listed, so remove 3 combinations. 12 − 3 = 9 unique cones.

@subject Quantitative Math

@unit Problem Solving

@topic Numbers and Operations

@plusmarks 1

## Dimensions of a Box Holding Books

@title Dimensions of a Box Holding Books

@description Estimate the dimensions of a rectangular box used to pack books.

@question

A shipment contains a rectangular box packed with 10 books in 2 rows of 5. Each book is 2 cm thick, 20 cm tall, and 15 cm wide. Which of the following is closest to the dimensions of the box in centimeters?  
  
(Image suggestion: Top view diagram showing 2 rows of 5 rectangles side-by-side inside a bigger rectangle.)

Choices:

* (A) 4 × 15 × 100
* (B) 4 × 20 × 75
* (C) 2 × 15 × 50
* (D) 4 × 20 × 150
* (E) 4 × 15 × 75

@instruction Select the answer that most closely matches the box’s dimensions.

@difficulty moderate

@Order 2

Options:

@option 4 × 15 × 100

@@option 4 × 20 × 75

@option 2 × 15 × 50

@option 4 × 20 × 150

@option 4 × 15 × 75

@explanation

Each book is 2 cm thick, so 2 rows require 4 cm total thickness. The height of the box equals the book height, 20 cm. Five books side-by-side each 15 cm wide gives 75 cm in length. Thus, box dimensions are approximately 4 × 20 × 75 cm.

@subject Quantitative Math

@unit Geometry and Measurement

@topic Area & Volume

@plusmarks 1