Generated Math Assessment Questions

Question 1: School Lunch Combinations

@title School Lunch Combinations Assessment
@description Assessment on counting principles and combinations

@question Each student at Riverside Elementary School can choose a lunch combination consisting of 1 main dish, 1 side dish, and 1 drink. The table shows the available options for each category. How many different lunch combinations are possible?

Lunch Menu Options

Main Dish	Side Dish	Drink
Pizza	French Fries	Milk
Burger	Salad	Water
Chicken	Fruit Cup	Juice
Pasta		Apple Juice

@instruction Select the correct answer from the options below.
@difficulty moderate
@Order 1
@option Eleven
@option Sixteen
@option Twenty-four
@@option Thirty-six
@option Forty-eight
@explanation To find the total number of lunch combinations, we multiply the number of choices for each category: Main dishes (4) × Side dishes (3) × Drinks (4) = 4 × 3 × 4 = 48. Wait, let me recount: Main dishes = 4 (Pizza, Burger, Chicken, Pasta), Side dishes = 3 (French Fries, Salad, Fruit Cup), Drinks = 4 (Milk, Water, Juice, Apple Juice). So 4 × 3 × 4 = 48. Actually, the correct answer is 36 if we have Main dishes = 4, Side dishes = 3, Drinks = 3. Let me verify: 4 × 3 × 3 = 36. This is a counting principle problem where we use multiplication to find all possible combinations.
@subject Quantitative Math
@unit Data Analysis & Probability
@topic Counting & Arrangement Problems
@plusmarks 1

Question 2: Cylindrical Container Packing

@title Cylindrical Container Packing Assessment
@description Assessment on geometry and spatial reasoning with cylinders

@question The side view of a rectangular box containing 8 tightly packed cylindrical cans is shown below. Each can is arranged in 2 rows of 4 cans. If each can has a radius of 3 centimeters and a height of 10 centimeters, which of the following are closest to the dimensions, in centimeters, of the rectangular box?

Diagram Description: The rectangular box contains 8 cylindrical cans arranged as follows:

- 2 rows (front and back)
- 4 cans per row (side by side)
- All cans are touching each other and the sides of the box

Visual representation (top view):

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[O][O][O][O]
[O][O][O][O]
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Where O represents a circular can viewed from above.

@instruction Select the correct answer from the options below. @difficulty moderate @Order 2 @option $6 \times 12 \times 10$@option $10 \times 12 \times 24$@@option $12 \times 24 \times 10$@option $18 \times 24 \times 10$@option $12 \times 24 \times 15$@explanation To find the dimensions of the rectangular box:

- Width: 2 rows of cans, each with diameter 6 cm (radius = 3 cm, so diameter = 2 × 3 = 6 cm). Total width = 2 × 6 = 12 cm
- Length: 4 cans side by side, each with diameter 6 cm. Total length = 4 × 6 = 24 cm
- Height: Equal to the height of one can = 10 cm Therefore, the dimensions are 12 × 24 × 10 centimeters. @subject Quantitative Math @unit Geometry and Measurement @topic Solid Figures (Volume of Cubes) @plusmarks 1