@title Packing Tennis Balls in a Box

@description This question tests understanding of how to calculate the dimensions of a box needed to hold a given arrangement of spheres.

@question The top view of a rectangular box of 9 tightly packed tennis balls is shown. Each tennis ball has a radius of 3 cm. Which of the following are closest to the dimensions, in centimeters, of the rectangular box?

![]( https://github.com/Tgoswami1/math-question-generation/blob/main/Tennis%20ball%20image.png)

@instruction Select the dimensions that most closely match the actual box size.

@difficulty moderate

@Order 2

@option \( 6 \times 9 \times 18 \)

@@option \( 6 \times 9 \times 27 \)

@option \( 9 \times 12 \times 27 \)

@option \( 6 \times 12 \times 24 \)

@option \( 9 \times 9 \times 18 \)

@explanation The diameter of each ball is \( 2 \times 3 = 6 \) cm. Arranging 3 balls across gives \( 3 \times 6 = 18 \) cm, 1 ball width gives 6 cm, and stacking 3 high gives \( 3 \times 9 = 27 \) cm.

@subject Quantitative Math

@unit Geometry and Measurement

@topic Area & Volume

@plusmarks 1

@title Ice Cream Cone Combinations

@description This question tests the ability to calculate the total number of combinations from two independent choices using a table.

@question A local ice cream shop offers the following choices of cones and ice cream flavors. Each customer chooses 1 cone and 1 scoop of ice cream. How many different combinations are possible?

## Menu Choices

| Cone Type | Flavor |

| :---: | :---: |

| Waffle | Vanilla |

| Sugar | Chocolate |

| Pretzel | Strawberry |

| Cup | Mint |

(A) Six

(B) Eight

@@option Twelve

@option Ten

@option Four

@instruction Choose the correct number of possible combinations.

@difficulty easy

@Order 1

@option Six

@option Eight

@@option Twelve

@option Ten

@option Four

@explanation There are 4 cone types and 3 flavors. The total combinations are \(4 \times 3 = 12\).

@subject Quantitative Math

@unit Problem Solving

@topic Numbers and Operations

@plusmarks 1