@title Shoe and Hat Combinations

@description Determine the total number of different outfits that can be created.

@question A store sells 3 different styles of hats and 4 different styles of shoes. A customer will buy exactly 1 hat and 1 pair of shoes. How many different hat-shoe combinations are possible?

@instruction Choose the correct number of possible combinations.

@difficulty easy

@Order 1

@option 6

@option 7

@@option 12

@option 15

@explanation To find the total number of combinations, multiply the number of hat choices by the number of shoe choices: $3 \times 4 = 12$.

@subject Quantitative

@unit Math Problem Solving

@topic Numbers and Operations

@plusmarks 1

@title Dimensions of a Box of Cylinders

@description Find the approximate dimensions of a rectangular box holding cylinders.

@question A manufacturer packs 8 identical soda cans in two rows of four. Each can is a cylinder with a diameter of 6 cm and height of 12 cm. The cans fit snugly in a rectangular box with no gaps. Which of the following is closest to the dimensions, in centimeters, of the box?

@instruction Choose the correct option.

@difficulty moderate

@Order 2

@option $6 \times 12 \times 24$

@@option $12 \times 12 \times 24$

@option $12 \times 24 \times 24$

@option $6 \times 24 \times 24$

@explanation The width is the diameter of two cans: $2 \times 6 = 12$ cm. The height is the same as the can height: 12 cm. The length is the diameter of four cans: $4 \times 6 = 24$ cm. So, $12 \times 12 \times 24$.

@subject Quantitative

@unit Math Geometry and Measurement

@topic Solid Figures (Volume of Cubes)

@plusmarks 1