# Generated Assessment Questions

@title Sandwich Combinations Assessment

@description Counting possible sandwich combinations given bread and filling choices.

@question A cafeteria offers 3 varieties of bread (white, wheat, rye) and 4 types of fillings (turkey, ham, cheese, tuna). Assuming a sandwich consists of exactly 1 bread and 1 filling, how many distinct sandwiches can be made?

@instruction Choose the correct answer.

@difficulty easy

@Order 1

@option Seven

@option Nine

@@option Twelve

@option Fifteen

@option Eighteen

@explanation The sandwich choice can be modelled using the Fundamental Principle of Counting. There are 3 choices for bread and 4 for filling, so total combinations = $3 imes4=12$.

@subject Quantitative Math

@unit Data Analysis & Probability

@topic Counting & Arrangement Problems

@plusmarks 1

@title Sphere Package Dimensions

@description Determining the dimensions of a rectangular package containing tightly packed spheres.

@question The top view of a rectangular package containing 8 tightly packed identical balls is shown below. Each ball has a radius of $1.5\, ext{cm}$. Which of the following are closest to the dimensions, in centimetres, of the rectangular package?

![Top view of 8 tightly packed balls arranged in 2 rows of 4](question2\_top\_view.png)

@instruction Select the option that best approximates the package dimensions (height × width × length).

@difficulty moderate

@Order 2

@option $3 imes 6 imes 9$

@option $4.5 imes 6 imes 12$

@@option $3 imes 6 imes 12$

@option $6 imes 9 imes 12$

@option $6 imes 12 imes 15$

@explanation Each ball has diameter $2r=3\, ext{cm}$. In a $2 imes4$ arrangement, length = $4 imes3=12$, width = $2 imes3=6$, and height (single layer) = $3$. Thus the closest dimensions are $3\, ext{cm} imes 6\, ext{cm} imes 12\, ext{cm}$.

@subject Quantitative Math

@unit Geometry and Measurement

@topic Area & Volume

@plusmarks 1