

BACCALAURÉAT GENERAL
PREUVE SPECIFIQUE DES SECTIONS EUROPEENNES
MATHEMATIQUES – ANGLAIS

Corrigé du sujet 22

I. Explain what the text deals with and comment on it.

Éléments à prendre en compte pour évaluer la capacité d'analyse et d'argumentation :

The candidate has to use his/her critical thinking about the advertisement.

- Is it correct to add the percentages and use an arithmetic sequence?
- After 15 seconds we get 105%, greater than 100%! Is it possible?
- The larger the percentage, the larger the print. Why?

The candidate should comment on each result because the questions asked are tricky.

II. Exercise

1.

a. In 100g of raw mushrooms there are 90g of water. After cooking only 18g of this water remains whereas there are still 10g of dry matter. $\frac{18}{18+10} \approx 0.64$ so the percentage of water in cooked mushrooms is about 64%.

b. At first sight it appears that the percentage of the remaining water might be smaller. Actually, even if the cooking removes the most part of the water, the ratio of water is still larger than a half.

2. The first multiplier factor is $(1+20\%)$ that is 1.2. The second one is $(1-20\%)$ that is 0.8. If we combine the two steps, we get $1.2 \times 0.8 = 0.96$ as multiplier factor. It means that the population decreased by 4% in 2 years.

3. For each side, the multiplier factor is $(1-10\%) = 0.9$. We know that the volume of a cube which edge is a in length is given by the formula: $\text{Volume} = a^3$. Thus, the new volume is: $(0.9 \times a)^3 = 0.729 \times a^3$.

It means that the multiplier factor for the volume is 0.729. Then, the percentage decrease of the volume is 27.1%.