

BACCALAURÉAT GÉNÉRAL ET TECHNOLOGIQUE
ÉPREUVE SPÉCIFIQUE DES SECTIONS EUROPÉENNES
MATHEMATIQUES – ANGLAIS

Corrigé 4

Thème : Percentages

For the first part, the expected points are:

- Percentage: definition and link with fraction.
- Use of percentages in everyday life (sales; labels on food (ingredients)...).
- Explanations/commentaries/opinion on the two quotations.
- Is it possible to have more than 100%?
- Things about Edison's life (American inventor: the phonograph, the motion picture camera, the electric light bulb... More than 1,000 patents).

Exercise

1. $120 \times 0.85 \times 0.9 = 120 \times 0.765 = 91.8$. $1 - 0.765 = 0.235$.
She is going to pay \$91.8 and the total discount is a 23.5% discount.

2. $\frac{63-56.25}{56.25} \times 100 = \frac{6.75}{56.25} \times 100 = 12$ (percentage change).
The price of the lamp increased of 12%.

3. $\frac{150-167}{167} \times 100 = \frac{-17}{167} \times 100 \approx -10.2$.
She needs at least a 10.2% discount to be able to purchase the carpet.

4. $1,838.85 \times \frac{2}{3} = 1,225.9$ and $1,838.85 - 1,225.9 = 612.95$.

• For the furniture :

* Price without the V.A.T : $\frac{1,225.9}{1.196} = 1,025$. * V.A.T : $1,225.9 - 1,025 = 200.9$.

• For the professional :

* Price without the V.A.T : $\frac{612.95}{1.055} \approx 581$. * V.A.T : $612.95 - 581 = 31.95$.

Amount of the V.A.T for the total bill : \$232.85, because : $200.9 + 31.95 = 232.85$.

$\frac{232.85}{1,838.85} \times 100 \approx 12.66$. The V.A.T represents 12.66% of the total amount.

Bonus : Explain the example in the text (to reverse an increase of 25%, you have to multiply by $\frac{1}{1.25} = 0.8$. This means a 20% decrease).