

**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).