

<p style="text-align: center;">BACCALAURÉAT GÉNÉRAL ET TECHNOLOGIQUE ÉPREUVE SPÉCIFIQUE DES SECTIONS EUROPÉENNES MATHEMATIQUES – ANGLAIS</p>

Corrigé 16

Thème : Sequences

- a) We could think that it is not a good deal because the first salary is very low.
One penny multiplied by two is only two pennies which is still very low.
- b) 1st day : 1 penny
2nd day : 2 pennies
3rd day : 4 pennies
4th day : 8 pennies
5th day : 16 pennies
Total for the first week : 31 pennies
- c) This situation can be represented by a geometric sequence as we multiply the salary by two each day, so the common ratio is equal to two
- d) $2^{(30-1)} = 536,870,912$
The 30th day, the salary is equal to 536,870,912 pennies that is to say approximately 5,368,709 pounds
- e) $(1-2^{30})/(1-2) = 1,073,741,823$
The total salary is equal to 1,073,741,823 pennies so 107,347,418 pounds
- f) $(31/1,073,741,823) = 2.9 \times 10^{-8}$
The percentage earned the first week is $2.9 \times 10^{-6} \%$