

Captains' fight

Captains' fight n°2 : Question

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You have **2 minutes** to answer the following question :

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Question : How many shoe boxes would be required to store Bill Gates fortune in form of 500€ bills ?

Captains' fight n°2 : Answer

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You really need the answer? Come on...

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- ▶ Bill Gates fortune is estimated to $79,2 \cdot 10^9$ dollars, so $70,8 \cdot 10^9$ €.
- ▶ A 500€ bill as dimensions : $16 \text{ cm} \times 8,2 \text{ cm}$ and we fit around 100 bills in 2 cm. So a bill volume is about : $2,6 \cdot 10^{-6} \text{ m}^3$
- ▶ Dimensions of a shoebox : $30 \text{ cm} \times 20 \text{ cm} \times 15 \text{ cm}$, such that its volume is : $9 \cdot 10^{-3} \text{ m}^3$.
- ▶ Finally, using a filling factor of 0.9, we get

$$N = \frac{70,8 \cdot 10^9}{500} \frac{2,6 \cdot 10^{-6}}{9 \cdot 10^{-3}} \frac{1}{0.9} \quad (1)$$

thus

$$\boxed{N = 45\,451 = 4,5 \cdot 10^4} \quad (\log_{10} N = 4.65) \quad (2)$$

You want more?

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Really?

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Quick : 1min

Question : How many orders of magnitude are there between the highest and lowest artificially obtained temperatures ?

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Answer

You want more ?

Really ?

Quick : 1min

Question : How many orders of magnitude are there between the highest and lowest artificially obtained temperatures ?

Answer

- ▶ Hottest temperature : quark and gluon plasma at LHC :
 5×10^{12} K
- ▶ Lowest temperature : adiabatic demagnetization : 5×10^{-10} K
- ▶ Thus : 22 orders of magnitude.