Question

Question ID: 883

13. Positive integers m and n are such that $2^m + 2^n = 1280$. What is the value of $m + n$?

A 14 B 16 C 18 D 32 E 640

Answer

13. **C** Since $1280 = 2^8 \times 5 = 2^8(2^0 + 2^2) = 2^8 + 2^{10}$, we may take m=8 and n = 10 (or vice versa) to get $m + n = 8 + 10 = 18$. It is easy to check that there are no other possibilities.