

Which Number is larger :- 2^{5555} , 3^{3333} 6^{2222}

Solⁿ:- $2^{5555} = (2^5)^{1111} = 32^{1111}$ \rightarrow using $(a^m)^n = a^{mn}$

$$3^{3333} = (3^3)^{1111} = 27^{1111}$$

$$6^{2222} = (3 \times 2)^{2222} = 3^{2222} \times 2^{2222} \quad \rightarrow \text{using } (a \times b)^m = a^m \times b^m$$

$$= (3^2)^{1111} \times (2^2)^{1111} \quad \rightarrow \text{using } (a^m)^n = a^{mn}$$

$$= 9^{1111} \times 4^{1111}$$

$$= (36)^{1111}$$

$$\rightarrow a^m \times b^m = (a \times b)^m$$

Sol $6^{2222} = (36)^{1111}$

$3^{3333} = 27^{1111}$

$2^{5555} = 32^{1111}$

Sol $6^{2222} > 2^{5555} > 3^{3333}$