11. For what value of x is $\sqrt{2} + \sqrt{2} + \sqrt{2} + \sqrt{2} = 2^x$ true?

A $\frac{1}{2}$ B $1\frac{1}{2}$ C $2\frac{1}{2}$ D $3\frac{1}{2}$ E $4\frac{1}{2}$

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11. **C** $\sqrt{2} + \sqrt{2} + \sqrt{2} + \sqrt{2} = 4\sqrt{2} = 2^2 \times 2^{1/2} = 2^{2\frac{1}{2}}$. Hence $x = 2\frac{1}{2}$.