

Question

Question ID: 891



21. The fraction $\frac{2008}{1998}$ may be written in the form $a + \frac{1}{b + \frac{1}{c + \frac{1}{d}}}$ where a, b, c and d are positive integers. What is the value of d ?
- A 2 B 4 C 5 D 199 E 1998

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Answer

21. **B** Since $2008/1998$ lies between 1 and 2, $a = 1$. Subtracting 1 and inverting gives $b + 1/(c + 1/d) = 1998/10 = 199 + 4/5$ so that $b = 199$. Then $1/(c + 1/d) = 4/5$ so that $c + 1/d = 5/4$ and this gives $c = 1$ and $d = 4$.
{Note : This is an example of a continued fraction.}