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Combining Functions | Past Paper Question | Edexcel Core Maths C3 January 2012 Q7d

$f(x) = \frac{1}{2x-1}, x \in \mathbb{R}, x > \frac{1}{2}$ Solve $fg(x) = \frac{1}{7}$

$g(x) = \ln(x+1)$

$fg(x) = \frac{1}{7}$

$\therefore f[\ln(x+1)] = \frac{1}{7}$

$\therefore \frac{1}{2[\ln(x+1)]-1} = \frac{1}{7}$


$\therefore 7 = 2\ln(x+1) - 1$

$\therefore 2\ln(x+1) = 8$

$\therefore \ln(x+1) = 4$

$\therefore x+1 = e^4$

$\therefore x = e^4 - 1$



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