

HW07

Sam Ly

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$$\begin{aligned}\frac{3}{7} &= \frac{0.3}{0.7} \\ &= \frac{0.3}{1-y}, \text{ where } y = 1 - 0.7 = 0.3 \\ &= \frac{0.3(1+y)}{(1-y)(1+y)} = \frac{0.3(1+y)}{1-y^2} \\ &= \frac{0.3(1+y)(1+y^2)}{(1-y^2)(1+y^2)} = \frac{0.3(1+y)(1+y^2)}{1-y^4} \\ &= \frac{0.3(1+y)(1+y^2)(1+y^4)}{(1-y^4)(1+y^4)} = \frac{0.3(1+y)(1+y^2)(1+y^4)}{1-y^8} \\ &\dots\end{aligned}$$