Quiz 1, Spring 2019

Each discussion section was given one of 11 – 12 or 21 – 22.

11. Find the Egyptian fraction expansion for **7/26.**

12. The pentagonal numbers are given by $\mathbf{P(2) = 5}$ and $\mathbf{P(}n\mathbf{ + 1) = P(}n\mathbf{) + 3}n\mathbf{ + 1}$ for $n \geq 2$. Prove by induction that $\mathbf{P(}n\mathbf{) = (3}n^2\mathbf{ - n)/2.}$

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21. Find the Egyptian fraction expansion for **5/26.**

22. The hexagonal numbers are given by $\mathbf{H(2) = 6}$ and $\mathbf{H(}n\mathbf{ +1) = H(}n\mathbf{) + 4}n\mathbf{ + 1}$ for $n \geq 2$. Prove by induction that $\mathbf{H(}n\mathbf{) = 2}n^2\mathbf{ - n.}$