MATH PROBLEM OF THE WEEK

Fall 2022

Problem 3

The function Γ assigns a pair of natural numbers a rational number using the rules:
(i) $\Gamma(0,0) = 1$
(ii) $\Gamma(m+1,n) = 128 \cdot \Gamma(m,n)$
(iii) $\Gamma(m,n+1) = \Gamma(m,n)/32$.
Find all pairs (m,n) of natural numbers such that $\Gamma(m,n) = 2$.

We welcome solutions from everyone. The undergraduate participant from the NMSU main campus with the most correct solutions at the end of the semester will receive an award of $500.

Solutions must be mathematically rigorous and originally obtained by the participants.
Participants will be notified if their solutions are correct within a week.

Deadline: Monday, October 17, 10 am

Next problem will be posted on October 17

Send solutions to: mathpotw@nmsu.edu
More information at: https://math.nmsu.edu/activities/math-problem-of-the-week.html