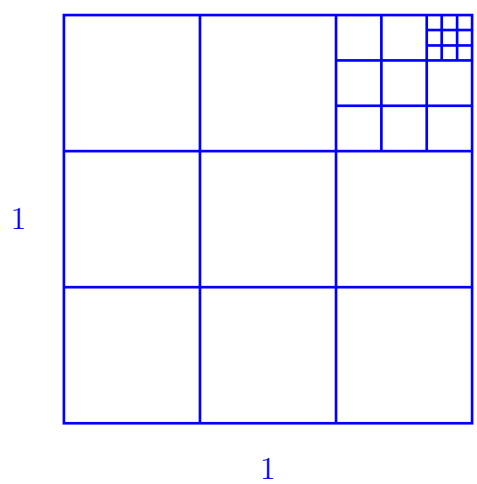
History of Mathematical Ideas
Quiz 6

Name:_____

You have 10 minutes to complete this quiz. If you have a question raise your hand and remain seated. In order to receive full credit your answer must be **complete**, **legible** and **correct**. Show your work, and give adequate explanations.

1. State Brahmagupta's Identity.

$$(a^2 - Nb^2)(c^2 - Nd^2) = (ac + Nbd)^2 - N(ad + bc)^2.$$

2. Give a visual argument establishing that $\frac{1}{9} + \frac{1}{9^2} + \frac{1}{9^3} + \cdots = \frac{1}{8}$. (Hint: Show $8 \cdot \frac{1}{9} + 8 \cdot \frac{1}{9^2} + 8 \cdot \frac{1}{9^3} + \cdots = 1$.)