PRINT Your Name:____________________

Quiz 9 — March 21, 2014 – Section 8 – 10:50 – 11:40

Remove everything from your desk except this page and a pencil or pen.
The solution will be posted soon after the quiz is given.

$\boxed{\text{Circle}}$ your answer. **Show your work. Your work must be correct and coherent.**
The quiz is worth 5 points.

Express the number $3.\overline{417} = 3.417417417\ldots$ as a ratio of two integers. Explain what you are doing. Your work must be correct and meaningful.

Answer: Let $b = 3.\overline{417} = 3.417417417\ldots$. Notice that $1000b = 3417.417417\ldots$. So,

$$999b = 1000b - b = 3417.417417\cdots - 3.417417417\cdots = 3414.$$

We conclude that $b = \boxed{\dfrac{3414}{999}}$.