

Real Quiz # 5 for Dr. Z.'s MathHistory

NAME: (print!) _____

Email DrZlinear@gmail.com as soon as I tell you (around 3:15pm)

Subject: q5

with an attachment called

q5FirstLast.pdf (e.g. q4BritannySpears.pdf)

1. (2 points) What is the name of the British born ecclesiastical mathematician who wrote the book "*Problems for the quickening of the mind*"? Briefly mention one of the puzzles from that book.

2. (1 points) What is the name of the book written by Leonrado of Pisa, aka as Fibonacci. What year did it appear?

3. (2 point) What promise to Tartaglia did Cardano break?

4. (5 points altogether) Consider the following infinite simple continued fraction

$$5 + 1/(5 + 1/(5 + 1/(5 + 1/...)) \quad ,$$

where 5 is at the start of each denominator and the numerators are all 1 (because it is a *simple* continued fraction). Find the exact value of this number in the form

(i) (4 points)

$$\frac{a + \sqrt{N}}{b} \quad .$$

for some positive integers a, b, N . What are a, b , and N ? Explain why this number is irrational.

(ii) (1 point): Explain why this implies that \sqrt{N} in (i) is an irrational number.