

BBC DOCUMENTARY: FERMAT'S LAST THEOREM

MAT 4/521

Directions: After watching the BBC documentary, “Fermat’s Last Theorem”, read and answer the following questions. You can find the video at:

<https://vimeo.com/24751596>

1. (a) What does Fermat’s Last Theorem claim?
(b) Where did Fermat “publish” his “Last Theorem”?
(c) Why is it called Fermat’s *Last* Theorem?
(d) Why did it hold such a fascination for mathematicians?
2. (a) Why did the problem appeal to Wiles, even as a child?
(b) Why did he work on it secretly?
(c) How long did it take him to solve the problem (roughly speaking)?
(d) What analogy does he use to describe the process of solving a mathematical problem?
(e) What did he study that helped him solve the problem? (Be specific. “Number theory” is a cute answer, but wrong...)
3. (a) What kind of curves are critical to the proof of Fermat’s Last Theorem?
(b) What is the name of the conjecture whose proof was critical to proving Fermat’s Last Theorem?
(c) How does Shimura describe his attempts to replicate Taniyama’s approach to solving problems?
(d) What “trick” allowed one to “count” the number of “packets” of these curves?
(e) What 19th-century technique caught the last curves that had “escaped the net”?
(f) What adjectives does Wiles use to describe the insight that led him back to his original approach to the proof?