

Answer the questions in the spaces provided. If you run out of room for an answer, continue on the back of the page.

Name and section: _____

Instructor's name: _____

1. Is it true that $x^n + y^n = z^n$ if x, y, z and n are positive integers?. Explain.
2. Prove that the real part of all non-trivial zeros of the function $\zeta(z)$ is $\frac{1}{2}$
3. Compute

$$\int_0^{\infty} \frac{\sin(x)}{x}$$

4. Which of these famous physicists invented time?
 - A. Stephen Hawking
 - B. Albert Einstein
 - C. Emmy Noether
 - D. This makes no sense
5. Which of these famous physicists published a paper on Brownian Motion?
 - ☐ Stephen Hawking
 - ☐ Albert Einstein
 - ☐ Emmy Noether
 - ☐ I don't know
6. Which is a hyperbola?

