9. Is there an enumeration of $\mathbb{Q}$ as $q_1, q_2, q_3, \ldots$ such that $\sum (q_n - q_{n+1})^2$ is finite?

10. Write down a differentiable function f from $[0, 1]$ to $\mathbb{R}$ such that f' is not (Riemann) integrable. If f' is bounded, must it be integrable?

11. Find a continuous surjection from $\mathbb{R}$ to $\mathbb{R}^2$.

12. Is there a continuous bijection from $\mathbb{R}$ to $\mathbb{R}^2$?

13. Construct a function from $\mathbb{R}$ to $\mathbb{R}$ that is infinitely-differentiable, but is identically 1 on $[-1, 1]$ and identically 0 outside $(-2, 2)$.

14. A subset of $\mathbb{R}$ is called *perfect* if it is closed and has no isolated points. Write down a (non-empty) perfect set that does not contain any (non-trivial) interval. Prove that every closed set is the union of a perfect set and a countable set.

15. Can a simple closed curve in the plane have positive area?