

You have 20 minutes to take this quiz. Each problem will be graded for clarity of work as well as correctness, so show all work **clearly and in order**. Circle or otherwise indicate your final answers. This time there are no problems on the back of the page; draw a house there for two points.

1. (10 points) [Similar to #41, 3.6]

Determine the numbers x between 0 and 2π where the tangent line to the curve $y = \sin^2 x$ is horizontal.

2. (10 points) [Similar to #18, 3.7]

Given that $x^2 + 4xy + y^3 + 5 = 0$, find the value of $\frac{dy}{dx}$ at the point $(2, -1)$.

Bonus (2 points): What does the number you found in problem (2) represent in terms of the graph of the equation $x^2 + 4xy + y^3 + 5 = 0$?