Quiz **Name**

1. Consider the differential equation $y'' + 2y' + 5y = 0$. Determine the auxiliary polynomial. Its roots are complex numbers of the form $a \pm bi$ with a and b real. Find both a and b. Write down the general solution $y = f(x)$ of the differential equation. (Your solution should have both an exponential or damping factor as well as a trigonometric or periodic factor.)

2. Compute $f'(x)$ for the general solution and then use the initial conditions $f(0) = 3$ and $f'(0) = 5$ to calculate the corresponding particular solution.