Complex Variables

Instructions Please write your name in the upper right-hand corner of the page. Write complete sentences to explain your solutions.

1. State Cauchy's integral formula.

2. Give an example of an analytic function that has both a zero of order 2 when $z = 1$ and a zero of order 3 when $z = 4$.

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3. Determine the order of the zero of the function $1 - \cos(z^4)$ at $z = 0$.