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1. Let $u = 3 + 2i$ and $v = -2 - 2i$. Calculate
 - a) uv , b) u/v , c) $1/u^*$, d) $|uv^*|$.
2. Write in polar representation
 - a) $2 - 2i$, b) $-1 + \sqrt{3}i$, c) $-2\sqrt{3} - 2i$ and d) $\sqrt{2}i$.Show the location of the numbers on the complex plane.
3. Let $u = 2e^{i\pi/4}$ and $v = e^{-i3\pi/4}$. Show the location of the numbers on the complex plane, and calculate using the polar representation
 - a) uv , b) u^3v^{-2} , c) $\frac{u^8}{256}$
4. Find all roots for the equation $z^3 = 1$, $z \in C$.
5. Expand in Taylor series $\sum_n a_n x^n$ functions
 - a) e^{2x+2} b) $x^3 e^{x^2}$, c) $\ln(2 + x^2)$.

Hint: do not evaluate the derivatives directly, but use the known series for functions e^x and $\ln(1 + x)$. Convert the expressions to these forms using the known properties for exp and ln -functions and change of variables.