Name: **Tutorial time:**

Number of the *completed* problem you want feedback on:

1. If $z = 5 - 3i$ and $w = -2 + 4i$, compute the following:

   (a) $z + w$

   (b) zw

   (c) $z + \overline{z}$

   (d) $\dfrac{z}{w^2}$

2. Find all solutions (real or complex) to the following:

   (a) $z^2 + z + 2 = 0$

   (b) $z^4 - 16 = 0$

3. Convert the points $\left(3, \frac{2\pi}{3}\right)$, $\left(-4, \frac{-3\pi}{4}\right)$, and $\left(2, \frac{7\pi}{6}\right)$ from polar to rectangular coordinates.

4. Convert the points $(2, -2)$ and $(-3, \sqrt{3})$ from rectangular to polar coordinates.

5. Let $z = 1 + i\sqrt{3}$ and let $w = \sqrt{2} - i\sqrt{2}$. Compute the following:

   (a) The polar forms of z and w.

   (b) $z^2 w$

   (c) $\frac{z^4}{w}$