8th Edition: Section 7.78-79, p. 267: #1, 2, 5, 6, 8[See hint below]

9th Edition: Section 7.85-86, p. 264: #1, 2, 6, 7, 9[See hint below]

Hints for #8[9]:

- Leave values in polar form for most of the problem. Near the end convert to rectangular.
- Use the $f(z) = \dfrac{p(z)}{q(z)}$ form for finding the residue at the simple pole.
- Use residues to evaluate $\displaystyle\oint_C \frac{1}{z^3+1}\,dz$
- $\displaystyle\oint_C \frac{1}{z^3+1}\,dz = \int_{L_R} \frac{1}{z^3+1}\,dz + \int_{C_R} \frac{1}{z^3+1}\,dz + \int_{L_1} \frac{1}{z^3+1}\,dz$

  Then as $R \to \infty$
  - Show that $\displaystyle\int_{C_R} \frac{1}{z^3+1}\,dz \to 0$
  - Parameterize the curve along $L_R : z = x$
  - Parameterize the curve along $L_1 : z =$ ____________
- Are $\displaystyle\int_0^\infty \frac{1}{x^3+1}\,dx$ and $\displaystyle\int_0^\infty \frac{1}{r^3+1}\,dr$ the same or different integrals?

FYI: Currently you have 4 homework scores, of which I am dropping 1. I will collect the following assignment on Wednesday for a total of 5 assignments and I will drop 2.

8th Edition: Section 6.71, p. 239: #1(a-c), 2 ***AND*** Section 6.74, p. 248: #1, 2, 3, 4, 5

9th Edition: Section 6.77, p. 237: #1(a-c), 2 ***AND*** Section 6.81, p. 246: #1(b,c,d), 2, 4, 5, 6