

HW #06

Due: 02/27/2019

1 Evaluate

$$\int_0^{2\pi} \frac{1}{3 - 2 \cos 2\theta} d\theta.$$

2. Same as above.

$$\int_{-\infty}^{\infty} \frac{\sin \pi x}{x^2 + x + 1} dx.$$

3. Evaluate the following integral

$$\int_0^{\infty} \frac{dx}{x^2 + 3x + 2},$$

by considering

$$\oint \frac{\log z}{z^2 + 3z + 2} dz,$$

using the integral path discussed in class. **No other method is accepted.**