**Applied Complex Variables and Asymptotic Methods**
**MATH 6720 – Section 001 – Spring 2023**
**Homework 5**
**Computing Integrals**

**Due: Friday, April 7, 2023**

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Below, problem C in section A.B is referred to as exercise A.B.C.

Text: *Complex Variables: Introduction and Applications*, Ablowitz & Fokas,

Exercises: 4.3.2

4.3.3

4.3.7, part (a) only. Note that $0 < k < 1$ is the correct restriction on $k$.

4.3.13, only compute the first integral, i.e., the one involving $x^{1/2} \log x$.

In addition, for this section the text considers the principal branch of $\log z$ and $z^{1/2}$ to correspond to $z = re^{i\theta}$ for $\theta \in [0, 2\pi)$.

Submit your homework assignment on Canvas via Gradescope.