

Math 150: Midterm #2

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1. Find the exact value of the expression $\sin\left(-\frac{9\pi}{4}\right) + \cot(405^\circ)$

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2. Graph the function $y = \sin\left(x - \frac{\pi}{4}\right)$

3. For the expression $\sec\left(\tan^{-1}\frac{1}{2}\right)$
- (a) find the exact value without a calculator;
 - (b) use a calculator to find the value rounded to three decimal places.

4. Simplify the expression $\sec x - \frac{\cos x}{1 + \sin x}$

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5. Find the value of the number C such that

$$\frac{1}{2}\sin^2 x + C = -\frac{1}{4}\cos(2x) .$$