

1. Find the exact value of:  $\cos\left(\frac{2\pi}{3} - \frac{\pi}{6}\right)$ . (3pt)

2. Prove the identity  $\sin\left(\frac{5\pi}{2} + x\right) = \cos(x)$  (3pt)

3. Verify the identity using the sum of angle formula: (4pt)

$$\frac{1 - \cos(2u)}{2} = \sin^2(u)$$

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