

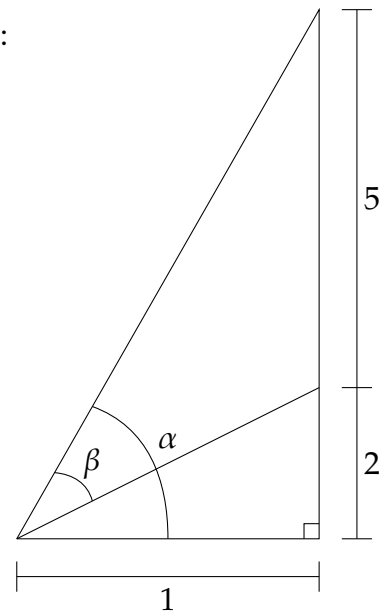
Quiz 8
Due: 2 April 2024

Answer the questions in the spaces provided. **Show all of your work and circle the answer you would like to have graded for each question.**

Name: _____

1. Use a sum formula to prove $\cos^2(x) - \sin^2(x) = \cos(2x)$ for any real number x .

2. Consult the picture and solve for the exact value of β :
Hint: Observe that $\tan(\alpha - \beta) = 2$.



(Not drawn to scale.)

3. Use sum and difference formulas to compute exact values for each of the following without a calculator:

a.) $\sin\left(\frac{5\pi}{4} + \frac{\pi}{3}\right);$

b.) $\cos(15^\circ);$

c.) $\sin\left(\arccos\left(\frac{1}{2}\right) + \arcsin\left(\frac{3}{5}\right)\right).$