

King Fahd University of Petroleum and Minerals
Faculty of Science - Per-Year Math Program
Math 002 - Term 072 – Worksheet 6.5

Question1

Find the exact value of the following expressions

- a. $\cot^{-1}(-\sqrt{3})$
- b. $\tan^{-1}\left(\tan \frac{4\pi}{3}\right)$
- c. $\sin^{-1}(\sin \pi)$
- d. $\cos(\cos^{-1} \frac{5}{4})$
- e. $\sec(\tan^{-1} 2)$

Question2

Find the exact value of $\cos^{-1}\left(-\frac{1}{2}\right) + \tan^{-1}\left(\tan \frac{5\pi}{6}\right)$

Question3

Verify the identity $\tan(2\cos^{-1} x) = \frac{2x\sqrt{1-x^2}}{2x^2-1}$.

Question4

Solve the equation $\cos^{-1} \frac{x}{2} + \sin^{-1}\left(\frac{-3}{5}\right) - \frac{\pi}{3} = 0$

Question5

Find the domain and the range of $y = -3\sin^{-1}(2x-1)$