

King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math 002 - Term 151
Recitation (7.3)

Question 1:

Given $\sec \alpha = -\frac{13}{12}$, α in quadrant II, and $\sin \beta = \frac{3}{5}$, β in quadrant II, find $\sec(\alpha + \beta)$.

Answer: $\frac{65}{33}$

Question 2: Find the value of : $\sin(210^\circ + x) - \cos(120^\circ + x)$ for any angle x .

Answer: 0

Question 3: Simplify $\sin\left(\frac{3\pi}{2} + \theta\right) + \cos\left(\frac{3\pi}{2} - \theta\right)$

Answer: (a): $-\sin \theta - \cos \theta$

Question 4 Find the exact value of the following expressions:

a) $\cos(165^\circ)$

b) $\sin 13^\circ \sin 73^\circ + \sin 77^\circ \sin 17^\circ$

c) $\frac{1 - \tan 69^\circ \tan 66^\circ}{\tan 69^\circ + \tan 66^\circ}$

Answer:

(a): $\frac{-\sqrt{6} - \sqrt{2}}{2}$

(b): $\frac{1}{2}$

(c): -1

Question 5 If $\cos \alpha = -\frac{\sqrt{5}}{3}$ and $\sin \beta = -\frac{1}{3}$, where α is in quadrant II and β is in quadrant IV, then $\cos(\alpha + \beta) =$

Answer: $\frac{-2\sqrt{10} + 2}{9}$