

King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math 002 - Term 142
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: $\sec(\alpha + \beta) = \frac{65}{33}$

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): $\cos 165^\circ = \frac{-\sqrt{6} - \sqrt{2}}{2}$

(b): $\sin 13^\circ \sin 73^\circ + \sin 77^\circ \sin 17^\circ = \frac{1}{2}$

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

Question 5 $\cot\left(\frac{11\pi}{12}\right) =$

A) $2\sqrt{3} - 4$

B) $\sqrt{3} - 2$

C) $-\sqrt{3} + 4$

D) $-\sqrt{3} - 2$

E) $\sqrt{3} + 2$

Answer: D) $-\sqrt{3} - 2$