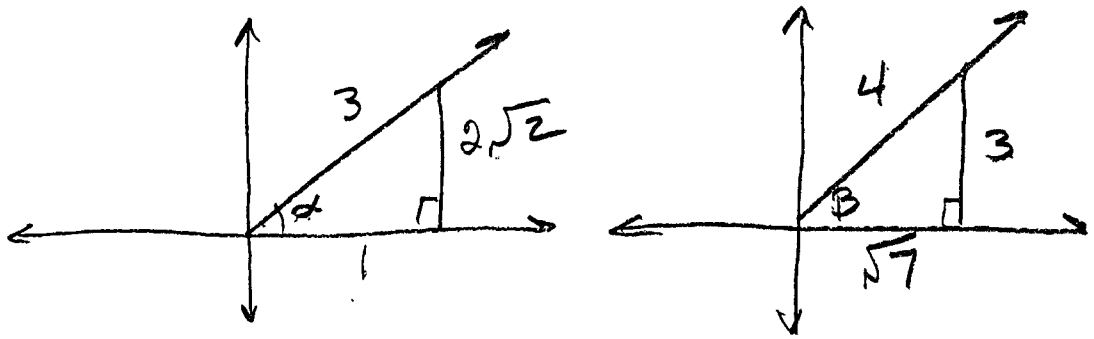
Mth113 MONDAY 2-25-13 CLASS NOTES

Pg 182
(39)

$\cos\alpha = \frac{1}{3}$ QUAD I,

$\sin\beta = \frac{3}{4}$ QUAD I FIND $\sin(\alpha+\beta)$

$$\sin(\alpha+\beta) = \sin\alpha\cos\beta + \cos\alpha\sin\beta$$



$$\sin(\alpha+\beta) = \frac{2\sqrt{2}}{3}\cdot\frac{\sqrt{7}}{4} + \frac{1}{3}\cdot\frac{3}{4}$$

$$= \frac{\sqrt{14}}{6} + \frac{1}{4} = \frac{2\sqrt{14}}{12} + \frac{3}{12}$$

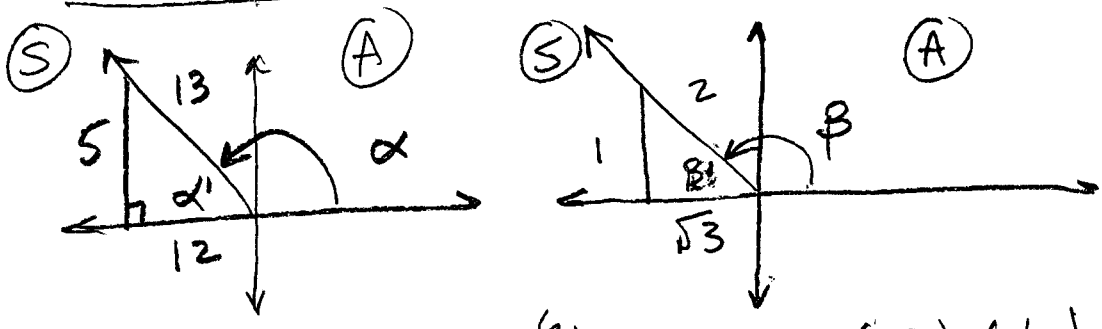
$$= \boxed{\frac{3+2\sqrt{14}}{12}}$$

(40) $\cos\alpha = \frac{-12}{13}$, QII

$\sin\beta = \frac{1}{2}$, QII

} FIND $\cos(\alpha - \beta)$

$$\cos(\alpha-\beta) = \cos\alpha\cos\beta + \sin\alpha\sin\beta$$



$$\cos(\alpha-\beta) = \left(-\frac{12}{13}\right)\left(-\frac{\sqrt{3}}{2}\right) + \left(\frac{5}{13}\right)\left(\frac{1}{2}\right)$$

$$= \frac{6\sqrt{3}}{13} + \frac{5}{26}$$

$$= \frac{12\sqrt{3}}{26} + \frac{5}{26} = \boxed{\frac{5+12\sqrt{3}}{26}}$$

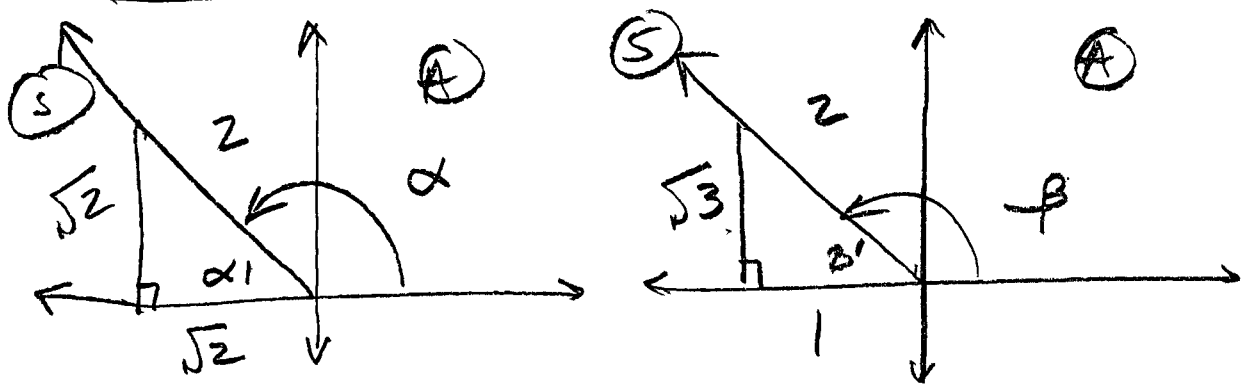
(55) Pg 182

$\cos\alpha = \frac{-\sqrt{2}}{2}$, QII

$\sin\beta = \frac{\sqrt{3}}{2}$, QII

} FIND $\tan(\alpha+\beta)$

$$\tan(\alpha+\beta) = \frac{\tan\alpha + \tan\beta}{1 - \tan\alpha\tan\beta}$$



$$\tan(\alpha+\beta) = \frac{(-1) + (-\sqrt{3})}{1 - [(-1)(-\sqrt{3})]}$$

$$= \frac{-1-\sqrt{3}}{1-[\sqrt{3}]} \cdot \frac{1+\sqrt{3}}{1+\sqrt{3}}$$

$$= \frac{-1-\sqrt{3}-\sqrt{3}-3}{1-3}$$

$$= \frac{-4-2\sqrt{3}}{-2}$$

$$= \boxed{2+\sqrt{3}}$$