Assignment #10
201-009-50 Cont'ed
Solutions
Fall 2009

① Find the co-terminal angle within the range $0 \leq \theta < 360°$

(i) $-35°$ (ii) $-120°$ (iii) $-330°$ (iv) $735°$ (v) $621°$ (vi) $412°$

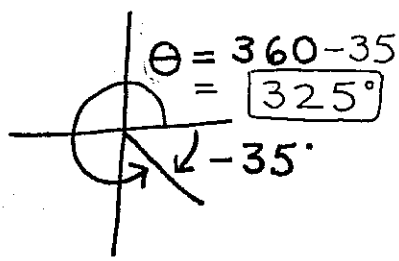
p. 186 # 2 d e g

p. 182 # 3 a i

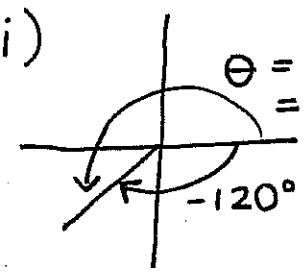
p. 186 # 5 e f L

SOLUTIONS

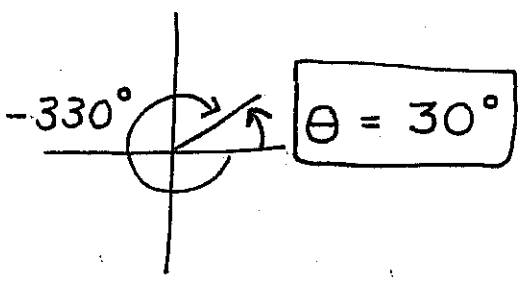
① (i)



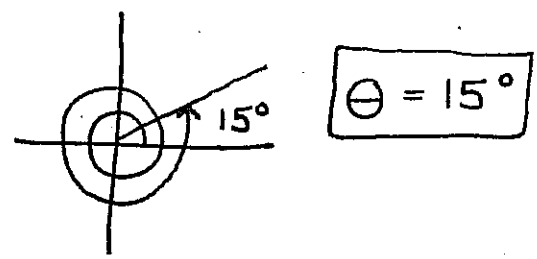
(ii)



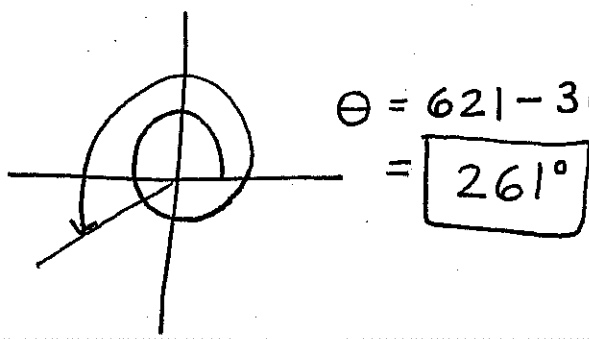
(iii)



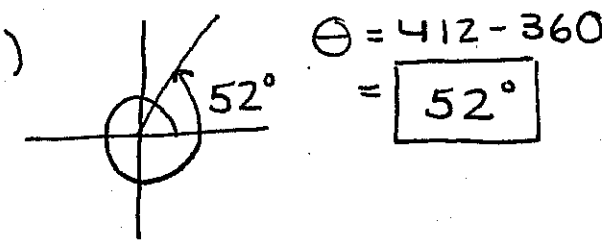
(iv)



(v)



(vi)



P. 186

#2 (d) $75^\circ = 75\left(\frac{\pi}{180}\right) = \frac{5\pi}{12}$

(e) $85^\circ = 85\left(\frac{\pi}{180}\right) = \frac{17\pi}{36}$

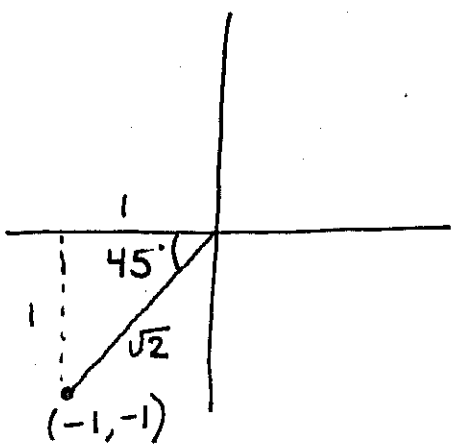
(g) $135^\circ = 135\left(\frac{\pi}{180}\right) = \frac{3\pi}{4}$

#3 (e) $\frac{7\pi}{15} = \frac{7\cancel{\pi}}{15}\left(\frac{180}{\cancel{\pi}}\right) = 84^\circ$

(f) $\frac{7\pi}{6} = \frac{7\cancel{\pi}}{6}\left(\frac{180}{\cancel{\pi}}\right) = 210^\circ$

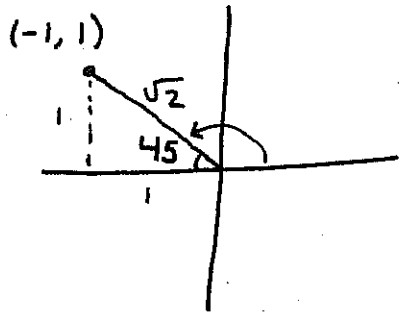
(j) $\frac{7\pi}{3} = \frac{7\cancel{\pi}}{3}\left(\frac{180}{\cancel{\pi}}\right) = 420^\circ$

P. 182 #3 (a) SIN 225°



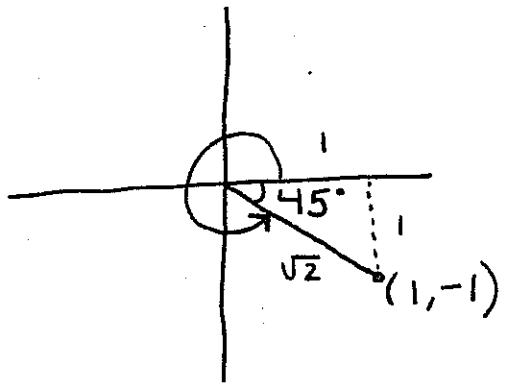
$\text{SIN}225^\circ = \frac{y}{r} = \boxed{\frac{-1}{\sqrt{2}}}$

#3 i $\cos 135°$



$\cos 135° = \frac{x}{r} = \frac{-1}{\sqrt{2}}$

$\sec 315°$



$\sec 315° = \frac{r}{x} = \frac{\sqrt{2}}{1}$

$\cos 135° + \sin 225° + \sec 315°$

$= \left(\frac{-1}{\sqrt{2}}\right) + \left(\frac{-1}{\sqrt{2}}\right) + \sqrt{2}$

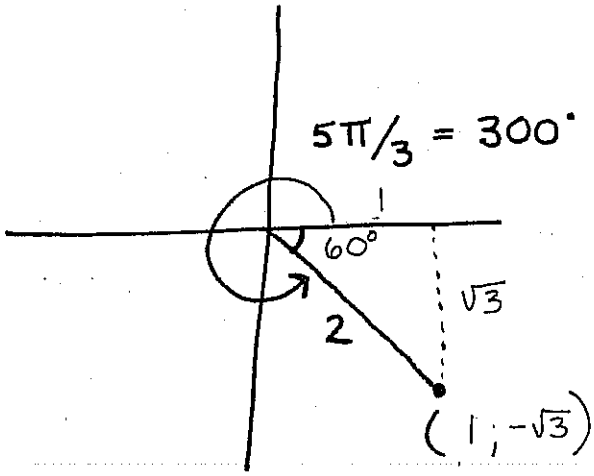
$= \frac{-2}{\sqrt{2}} + \sqrt{2}\left(\frac{\sqrt{2}}{\sqrt{2}}\right)$

$= \frac{-2}{\sqrt{2}} + \frac{2}{\sqrt{2}} = \boxed{0}$

P. 186

#5 (e) $\sec \frac{5\pi}{3}$

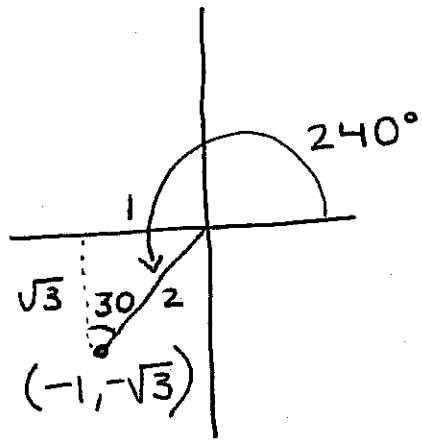
$\frac{5\pi}{3} = \frac{5\pi}{3}\left(\frac{180}{\pi}\right) = 300°$



$\sec \frac{5\pi}{3} = \frac{r}{x} = \frac{2}{1} = \boxed{2}$

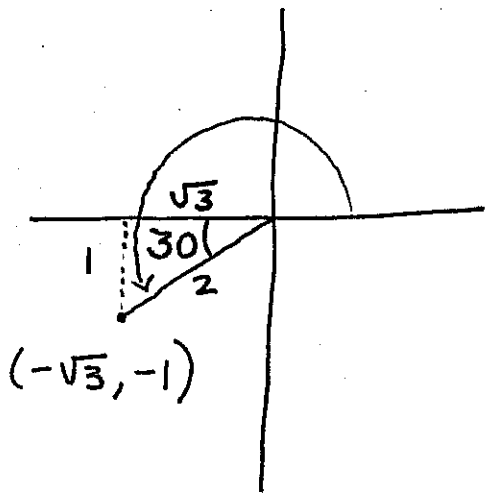
(f) $\cot\left(\frac{4\pi}{3}\right)$

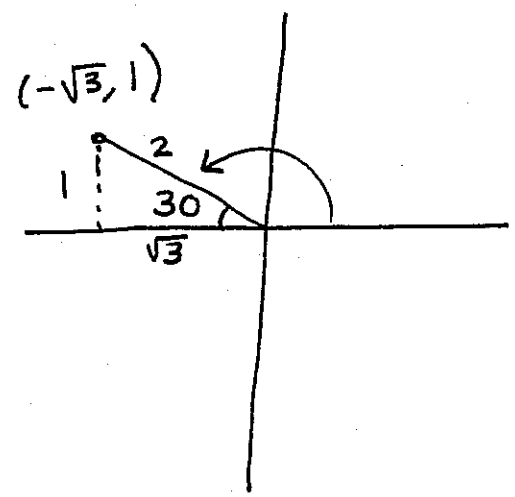
$\frac{4\pi}{3} = \frac{4\pi}{3}\left(\frac{180}{\pi}\right) = 240°$



$\cot\left(\frac{4\pi}{3}\right) = \frac{x}{y} = \frac{-1}{-\sqrt{3}} = \boxed{1/\sqrt{3}}$

(l) $\sin\left(\frac{7\pi}{6}\right) + \cos\left(\frac{5\pi}{6}\right)$





$\sin\left(7\pi/6\right) + \cos\left(5\pi/6\right)$

$= \quad y/r + x/r$

$= \quad -1/2 + -\sqrt{3}/2$

$= \quad \boxed{\frac{-1-\sqrt{3}}{2}}$