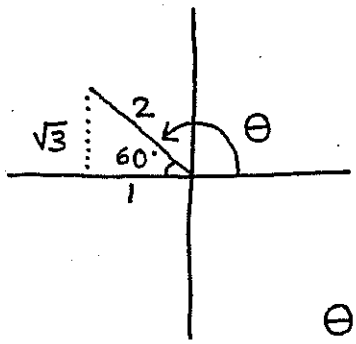
Assignment 10 solutions
201-009-50
FALL 2009

① (i) 325° (ii) 240° (iii) 30° (iv) 15° (v) 100° (vi) 52°

②



$\sin\theta = \frac{\sqrt{3}}{2}$

$\cos\theta < 0$

$\theta = 180° - 60° = 120°$

IN RADIANS $\theta = 120°\left(\frac{\pi}{180°}\right) = \boxed{\frac{2\pi}{3}}$

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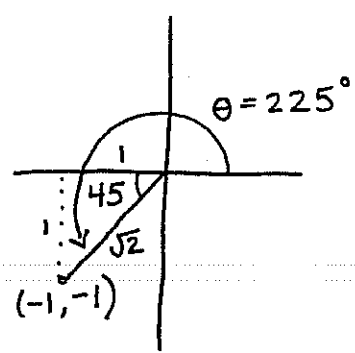
2 (d) $75° = 75\left(\frac{\pi}{180}\right) = \boxed{\frac{5\pi}{12}}$ (e) $85° = 85\left(\frac{\pi}{180}\right) = \boxed{\frac{17\pi}{36}}$

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

3 (e) $\frac{7\pi}{15} = \frac{7\pi}{15}\left(\frac{180}{\pi}\right) = \boxed{84°}$ (f) $\frac{7\pi}{6} = \frac{7\pi}{6}\left(\frac{180}{\pi}\right) = \boxed{210°}$

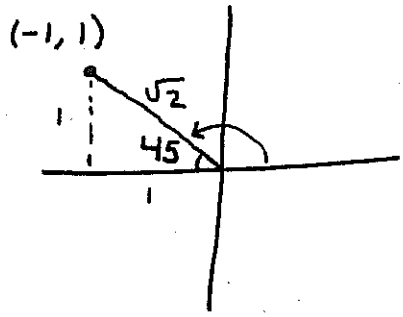
(j) $\frac{7\pi}{3} = \frac{7\pi}{3}\left(\frac{180}{\pi}\right) = \boxed{420°}$

P. 182 # 3 a $\sin 225°$



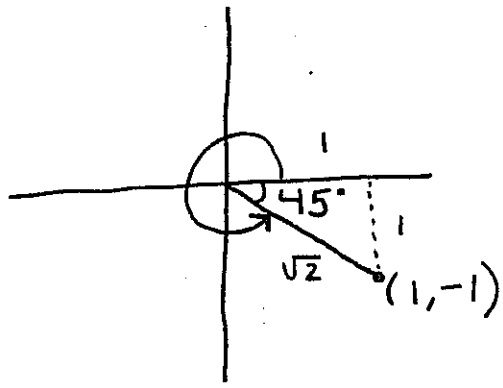
$\sin 225° = \frac{y}{r} = \boxed{\frac{-1}{\sqrt{2}}}$

#3 i $\cos 135°$



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

$\sec 315°$



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

$\cos 135° + \sin 225° + \sec 315°$

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

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

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

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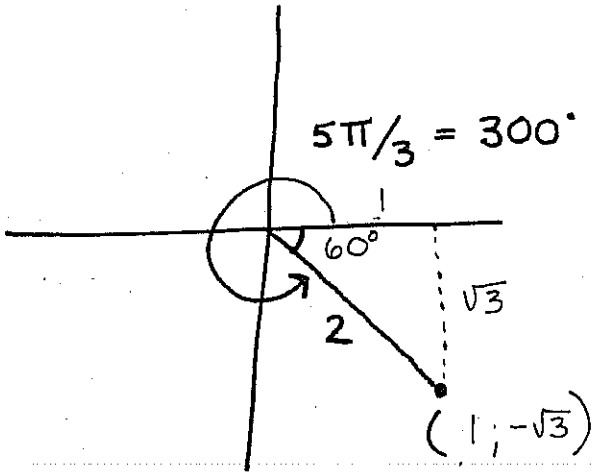
#5 (e) $\sec \frac{5\pi}{3}$

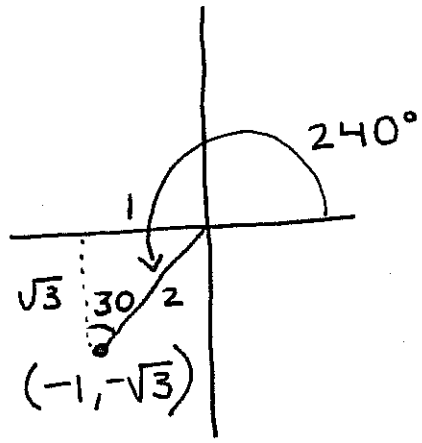
$\frac{5\pi}{3} = \frac{5\pi}{3}\left(\frac{180}{\pi}\right) = 300°$



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

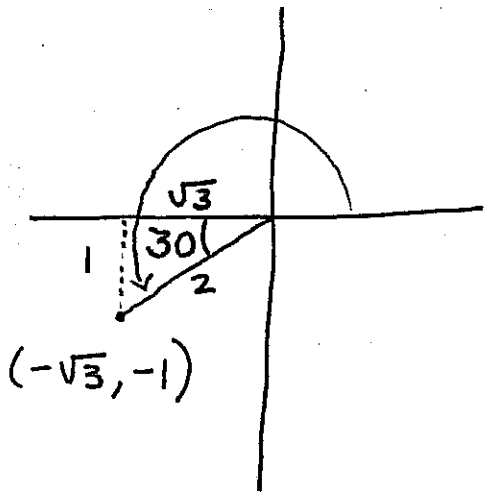
(f) $\cot\left(\frac{4\pi}{3}\right)$

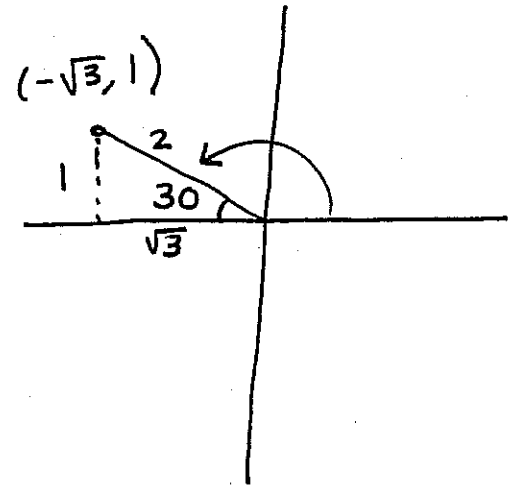
$\frac{4\pi}{3} = \frac{4\pi}{3}\left(\frac{180}{\pi}\right) = 240°$



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

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





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

$= \frac{y}{r} + \frac{x}{r}$

$= -\frac{1}{2} + -\frac{\sqrt{3}}{2}$

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