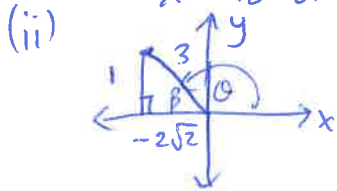


6.a)  $\sin \theta = \frac{1}{3}$

(i)  $r^2 = x^2 + y^2$   
 $(3)^2 = x^2 + 1^2$

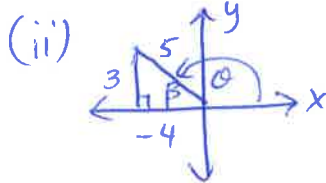
$x = \sqrt{8}$  or  $-2\sqrt{2}$ ,  $y = 1$ ,  $r = 3$



(iii)  $\beta = \sin^{-1}(\frac{1}{3})$   
 $\beta \doteq 19^\circ \leftarrow \text{ref. acute } \angle$   
 $\theta \doteq 180^\circ - 19^\circ$   
 $\theta = 161^\circ \leftarrow \text{principal } \angle$

6.b)  $\cot \theta = -\frac{4}{3}$

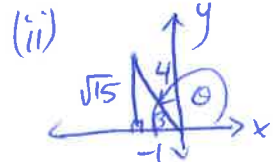
(i)  $y = 3, x = -4$   
 $r^2 = 3^2 + (-4)^2$   
 $r^2 = 25$   
 $r = 5$



(iii)  $\tan \theta = -\frac{3}{4}$   
 $\beta = \tan^{-1}(\frac{3}{4})$   
 $\beta \doteq 37^\circ$   
 $\theta = 180^\circ - 37^\circ$   
 $\theta = 143^\circ$

6.c)  $\cos \theta = -\frac{1}{4}$

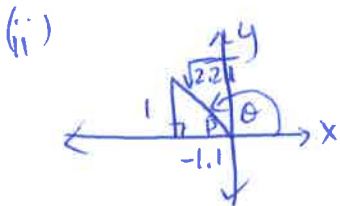
(i)  $x = -1, r = 4$   
 $y^2 = r^2 - x^2$   
 $y^2 = 16 - 1$   
 $y^2 = 15$   
 $y = \sqrt{15}$



(iii)  $\beta = \cos^{-1}(\frac{1}{4})$   
 $\beta \doteq 76^\circ$   
 $\theta = 180^\circ - 76^\circ$   
 $\theta = 104^\circ$

6.e)  $\tan \theta = -\frac{1.1}{1}$

(i)  $y = 1, x = -1.1$   
 $r^2 = 1^2 + (-1.1)^2$   
 $r^2 = 1 + 1.21$   
 $r = \sqrt{2.21}$



(iii)  $\beta = \tan^{-1}(1.1)$   
 $\beta \doteq 48^\circ$   
 $\theta = 180^\circ - 48^\circ$   
 $\theta \doteq 132^\circ$

8.a)  $\sin \theta = 0.4815$

$\theta = \sin^{-1}(0.4815)$   
 $\theta \doteq 29^\circ$  in Quad I  
 and  $\theta = 180^\circ - 29^\circ$   
 $\theta = 151^\circ$  in Quad II

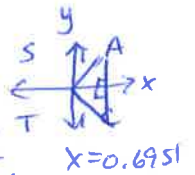
8.b)  $\tan \theta = -0.1623$   
 $\beta = \tan^{-1}(0.1623)$   
 $\beta \doteq 9^\circ$

In Quad II  $\theta = 180 - 9$   
 $\theta \doteq 171^\circ$   
 In Quad IV  $\theta = 360 - 9^\circ$   
 $\theta \doteq 351^\circ$

8.f)  $\sec \theta = \frac{0}{1} \leftarrow \frac{r}{x}$   
 $\therefore r \neq 0$  ( $r = 1$  always)  
 $\therefore$  not possible.

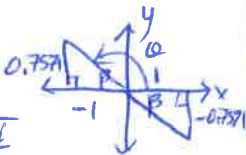
9.a)  $\cos \theta = 0.6951$

In Quad I  $\theta = \cos^{-1}(0.6951)$   
 $\theta \doteq 46^\circ$   
 In Quad IV  $\theta = 360^\circ - 46^\circ$   
 $\theta \doteq 314^\circ$

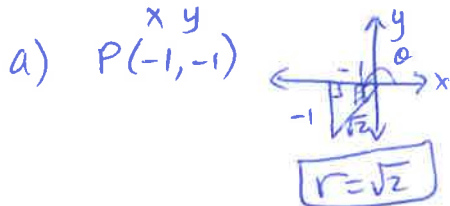


9.b)  $\tan \theta = -0.7571$

In Quad II  $\beta \doteq 37^\circ$   
 $\theta = 180^\circ - 37^\circ$   
 $\theta \doteq 143^\circ$   
 In Quad IV  $\theta = 360^\circ - 37^\circ$   
 $\theta \doteq 323^\circ$



#10.

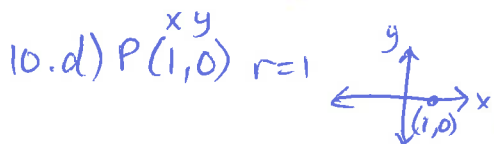


(i)  $\beta = 45^\circ$   
 $\therefore \theta = 180^\circ + 45^\circ$   
 $\theta = 225^\circ$   
 or  $\theta = -135^\circ$

(ii)  $\sin \theta = \frac{-1}{\sqrt{2}}$  or  $\frac{-\sqrt{2}}{2}$

$\cos \theta = \frac{-\sqrt{2}}{2}$

$\tan \theta = \frac{-1}{-1}$  or 1

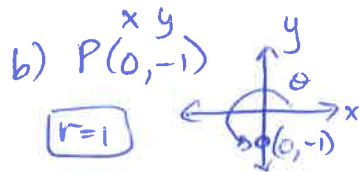


(i)  $\theta = 0^\circ, 360^\circ$  or  $-360^\circ$

(ii)  $\sin \theta = \frac{0}{1}$  or 0

$\cos \theta = \frac{1}{1}$  or 1

$\tan \theta = \frac{0}{1}$  or 0

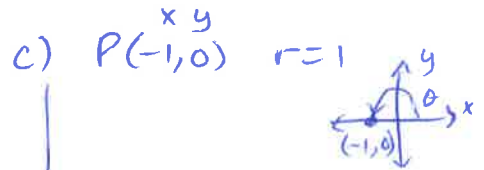


(i)  $\theta = 270^\circ$   
 or  $\theta = -90^\circ$

(ii)  $\sin \theta = \frac{-1}{1}$  or -1

$\cos \theta = \frac{0}{1}$  or 0

$\tan \theta = \frac{-1}{0}$  or undefined.



(i)  $\theta = 180^\circ$  or  $-180^\circ$

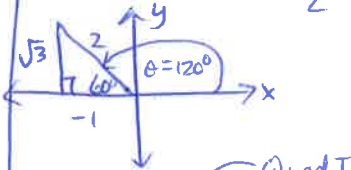
(ii)  $\sin \theta = \frac{0}{1}$  or 0

$\cos \theta = \frac{-1}{1}$  or -1

$\tan \theta = \frac{0}{-1}$  or 0

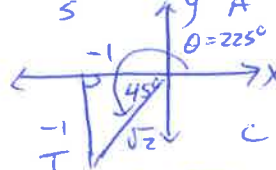
P. 30-1 #8.

a)  $\sin 120^\circ = \frac{\sqrt{3}}{2}$



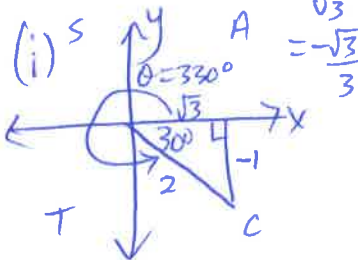
(i)  $\theta = 60^\circ$  or  $120^\circ$

b)  $\cos 225^\circ = \frac{-1}{\sqrt{2}}$  or  $\frac{-\sqrt{2}}{2}$



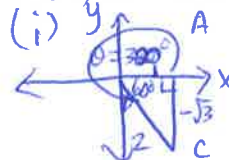
(ii)  $\theta = 225^\circ$  or  $\theta = 180^\circ - 45^\circ = 135^\circ$

8.c)  $\tan 330^\circ = \frac{-1}{\sqrt{3}}$



(ii)  $\theta = 180^\circ - 30^\circ = 150^\circ$

8.d)  $\cos 300^\circ = \frac{1}{2}$



(ii)  $\theta = 60^\circ$