Exercise 12.1 (Solutions)

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•		the values o							
	(i)	sin 53' 40'	(i	i) cos 36	20 [°]		(111)	tan 19, 30'	
	(iv)	cot 33° 50′	(1	r) $\cos 42$	38′		(vi)	tan 25° 34′	
	(vii)	sin 18 [•] 31′	(1	viii) cos 52	• 13′		(ix)	cot 89° 9′	
Solu	tion.							,	
··· •	Fron	n trigonome	tric table	s or calcul	ators	, we ea	sily hav	'e	
	(j.)	sin 53° 40′							
	(iii)	tan 19°30'	= 0.3541	(iv)	ωt	33° 50′	$=\frac{1}{\tan 3}$	$\frac{1}{350} = 1.4919$	
	(v)	cos 42° 38′	= 0.7357	(vi)	tan	25° 34′	= 0.478	85	
	(vii)	sin 18° 31′	= 0.3176	(viii	i) cos	52° 13′	= 0.61	28	
	(ir	.ot 89* 9' =	1 tan 89° 9	- = 0.173	6				
2.	Find	θ, if:							
	(i)	$\sin\theta=0.57$	791		(ii)	$\cos \theta =$	0.9316	,	
	(iii)	$\cos \theta = 0.52$	57		(iv)	tan 0 =	= 1 . 705		
	(v)	$\tan\theta=21.9$	43		(vi)	sinθ=	: 0.5186	•	
Solution.		From trigonometric tables or calculators, we easily have							
• .	(i)	$\sin\theta=0.57$	′91 ⇒	$\theta = \sin^{-1}$	0.57	$)1 \Rightarrow$	$\theta = 35$	5* 23′	

		•	0 = 511 0.5751		0 = 00.20
(ii)	$\cos\theta = 0.9316$	⇒ '	$\theta = \cos^{-1} 0.9316$	\Rightarrow	$\theta = 21^{\circ}19^{\circ}$
(iii)	$\cos\theta=0.5257$	⇒	$\theta = \cos^{-1} 0.5257$	\Rightarrow	$\theta = 58^{\circ} 17^{\prime}$
(iv)	$\tan \theta = 1.705$	⇒	$\theta = \tan^{-1} 1.705$	⇒	$\theta = 59^{\circ}36^{\circ}$
(v)	$\tan\theta=21.943$	⇒	$\theta = \tan^{-1} 21.943$	⇒	$\theta = 87^{\circ} 23'$
(vi)	$\sin_2\theta = 0.5186$	⇒	$\theta = \sin^{-1} 0.5186$	\Rightarrow	$0 = 31^{-14}$