1. **Find the values of:**

    (i) $\sin 53° 40'$ (ii) $\cos 36° 20'$ (iii) $\tan 19° 30'$

    (iv) $\cot 33° 50'$ (v) $\cos 42° 38'$ (vi) $\tan 25° 34'$

    (vii) $\sin 18° 31'$ (viii) $\cos 52° 13'$ (ix) $\cot 89° 9'$

Solution.

From trigonometric tables or calculators, we easily have

(i) $\sin 53° 40' = 0.8056$ (ii) $\cos 36° 20' = 0.8055$

(iii) $\tan 19° 30' = 0.3541$ (iv) $\cot 33° 50' = \dfrac{1}{\tan 33° 50'} = 1.4919$

(v) $\cos 42° 38' = 0.7357$ (vi) $\tan 25° 34' = 0.4785$

(vii) $\sin 18° 31' = 0.3176$ (viii) $\cos 52° 13' = 0.6128$

(ix) $\cot 89° 9' = \dfrac{1}{\tan 89° 9'} = 0.1736$

2. **Find θ, if:**

    (i) $\sin \theta = 0.5791$ (ii) $\cos \theta = 0.9316$

    (iii) $\cos \theta = 0.5257$ (iv) $\tan \theta = 1.705$

    (v) $\tan \theta = 21.943$ (vi) $\sin \theta = 0.5186$

Solution. From trigonometric tables or calculators, we easily have

(i) $\sin \theta = 0.5791 \implies \theta = \sin^{-1} 0.5791 \implies \theta = 35° 23'$

(ii) $\cos \theta = 0.9316 \implies \theta = \cos^{-1} 0.9316 \implies \theta = 21° 19'$

(iii) $\cos \theta = 0.5257 \implies \theta = \cos^{-1} 0.5257 \implies \theta = 58° 17'$

(iv) $\tan \theta = 1.705 \implies \theta = \tan^{-1} 1.705 \implies \theta = 59° 36'$

(v) $\tan \theta = 21.943 \implies \theta = \tan^{-1} 21.943 \implies \theta = 87° 23'$

(vi) $\sin \theta = 0.5186 \implies \theta = \sin^{-1} 0.5186 \implies \theta = 31° 14'$