

Trigonometric Ratios Ex 5.3 Q16

Answer:

Given: $\sec 4A = \csc \left(A - 20^{\circ}\right)$ and 4A is an acute angle

We have to find θ

Now

$$\sec 4A = \csc \left(A - 20^{\circ}\right)$$

$$\sec 4A = \sec \left\{ 90^{\circ} - \left(A - 20^{\circ} \right) \right\}$$

$$\sec 4A = \sec \left(90^{\circ} - A + 20^{\circ}\right)$$

$$\sec 4A = \sec \left(110^{\circ} - A\right)$$

$$5A = 110^{\circ}$$

$$A = 22^{\circ}$$

Hence the value of A is 22°

Trigonometric Ratios Ex 5.3 Q17

Answer:

Given: $\sec 2A = \csc (A - 42^{\circ})$ and 2A is an acute angle

We have to find θ

So we proceed as follows to calculate heta

$$\sec 2A = \csc \left(A - 42^{\circ} \right)$$

$$\Rightarrow \sec 2A = \sec \left\{ 90^{\circ} - \left(A - 42^{\circ} \right) \right\}$$

$$\Rightarrow$$
 sec $2A = \sec(90^{\circ} - A + 42^{\circ})$

$$\Rightarrow$$
 sec $2A = \sec(132^{\circ} - A)$

$$\Rightarrow 3A = 132^{\circ}$$

$$\Rightarrow A = 44^{\circ}$$

Hence the value of A is $\boxed{44^{\circ}}$

********* END *******