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Question 7:
(i) LHS=
              \sin(70^{\circ} + \theta) - \cos(20^{\circ} - \theta)
 = \sin[90^{\circ} - (20^{\circ} - \theta)] - \cos(20^{\circ} - \theta)
 = \sin(90^{\circ} - \phi) - \cos\phi \text{ where } (20^{\circ} - \theta = \phi)
 =\cos\phi-\cos\phi=0
= RHS
(ii) LHS=
            tan(55^{\circ} - \theta) - \cot(35^{\circ} + \theta)
 = tan[90^{\circ} - (35^{\circ} + \theta)] - cot(35^{\circ} + \theta)
 = tan(90^{\circ} - \phi) - \cot \phi where (35^{\circ} + \theta) = \phi
 = \cot \phi - \cot \phi
= RHS
(iii) LHS=
           \cos ec (67^{\circ} + \theta) - \sec (23^{\circ} - \theta)
 = \cos ec(90^{\circ} - \phi) - \sec \phi where 23^{\circ} - \theta = \phi
  = \sec \phi - \sec \phi = 0
= RHS
(iv) LHS = \csc(65^{\circ} + \theta) - \sec(25^{\circ} - \theta) - \tan(55^{\circ} - \theta) + \cot(35^{\circ} + \theta)
= \cos ec[90^{\circ} - (25^{\circ} - \theta)] - \sec(25^{\circ} - \theta)
                             -\tan[90^{\circ}-(35^{\circ}+\theta)]+\cot(35^{\circ}+\theta)
= \sec(25^{\circ} - \theta) - \sec(25^{\circ} - \theta) - \cot(35^{\circ} + \theta) + \cot(35^{\circ} + \theta)
= 0
= RHS
(v) LHS =
         \sin(50^{\circ} + \theta) - \cos(40^{\circ} - \theta) + \tan 1^{\circ} \tan 10^{\circ} \tan 20^{\circ} \tan 70^{\circ}
                                                               tan 80° tan 89°
 = \sin[90^{\circ} - (40^{\circ} - \theta)] - \cos(40^{\circ} - \theta) + \tan 1^{\circ} \tan 10^{\circ} \tan 20^{\circ}
                                        tan (90° - 20°) tan (90° - 10°) tan (90° - 1°)
             = \cos(40^{\circ} - \theta) - \cos(40^{\circ} - \theta) + \tan 1^{\circ} \tan 10^{\circ}
                     tan 20° cot 20° cot 10° cot 1°
= 0 + 1 = 1
= RHS
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\*\*\*\*\*\*\*\*\* END \*\*\*\*\*\*\*