4. Find the values of cos (tan$_{-1}$−1 ¾)

Solution:

Let, tan$_{-1}$−1 ¾ = θ

Therefore, tan θ = ¾

We know that sec$_2$2 θ - tan$_2$2 θ = 1
⇒ sec θ = √(1 + tan$_2$2 θ)
⇒ sec θ = √(1 + (3/4)$_2$2)

⇒ sec θ = √(1 + 9/16)

⇒ sec θ = √(25/16)

⇒ sec θ = 5/4

Therefore, cos θ = 4/5

⇒ θ = cos$_{-1}$−1 4/5
Now, cos (tan$_{-1}$−1 ¾) = cos (cos$_{-1}$−1 4/5) = 4/5
Therefore, cos (tan$_{-1}$−1 ¾) = 4/5

5. Find the values of sec csc$_{-1}$−1 (2/√3)

Solution:

sec csc$_{-1}$−1 (2/√3)
= sec csc$_{-1}$−1 (csc π/3)
= sec (csc$_{-1}$−1csc π/3)

= sec π/3

= 2

Therefore, sec csc$_{-1}$−1 (2/√3) = 2