Hyperbolic Functions – Q2 [Practice/E](16/6/23)

(a) Find the formula connecting $tanh^2 x$ & $sech^2 x$?

(b) Find the formula connecting $coth^2 x$ & $cosech^2 x$?

Solution

From $cosh^2x - sinh^2x = 1$,

(a) divide by $cosh^2x$, to give $1 - tanh^2x = sech^2x$

(b) divide by $sinh^2x$, to give $coth^2x - 1 = cosech^2x$