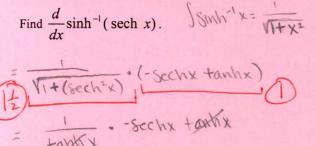
SCORE: ____/20 POINTS + ____/10 POINTS FROM GREENSHEET QUIZ

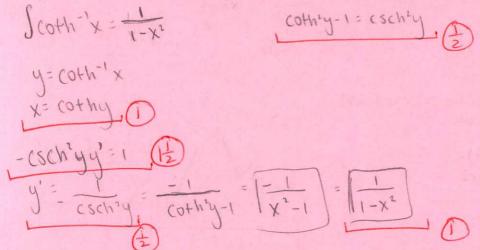
NO CALCULATORS ALLOWED SHOW PROPER WORK & SIMPLIFY ALL ANSWERS (ANSWERS WITHOUT SOLUTIONS WILL *NOT* EARN FULL CREDIT)



1-tanh2x= sech2x -tanh2x= sech2x-1 tanh2x=1-sech2x SCORE: $\frac{2}{2}/3$ PTS

Prove the derivative of coth⁻¹ x. Do NOT use any other inverse hyperbolic functions in your proof.

You may use any of the other identities or derivatives of (non-inverse) hyperbolic functions that were listed in your textbook without proving them. NOTE: The Pythagorean-like identity for coth x must be proven if you wish to use it.



Using the definition of "area under a function" given in class, write an algebraic expression for the area under SCORE: $\frac{1}{2}$ /3 PTS $f(x) = \sqrt{7x+2}$ over the interval [1, 4]. Do NOT evaluate the expression. You do NOT need to draw a graph to explain your answer.

f(x): VTX+2 [1,4] f(1+idx) dx dx: b-a: 3

$$=\frac{\lim_{n\to\infty}\sum_{i=1}^{n}(\sqrt{n}(1+3i)+2)(\frac{3}{n})}{(\frac{3}{n})}$$

$$\lim_{X \to 0^{-}} \operatorname{csch}_{X}$$

Prove the logarithmic formula for $\sinh^{-1} x$.

y= sinh x

y= sinh x

coshy: Vi+sinh y

coshyy = 1

y'= coshy = Vi+sinh y

Vi+sinh y

Vi+sinh y

Estimate the area under the function shown on the right over the interval [-3, 5] using the right hand sum with 4 equal width subintervals.

