

Math 132 - Quiz 5

September 28, 2022

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due October 3.

1. (1 point) Evaluate the limit: $\lim_{x \rightarrow 0} \frac{\sinh x}{x}$

2. (1 point) Determine $f'(x)$ if $f(x) = \ln(\sinh x)$.

3. (1 point) Use the quotient rule to prove $\frac{d}{dx} \operatorname{sech} x = -\operatorname{sech} x \tanh x$.

4. (1 point) Evaluate the indefinite integral: $\int x \sinh x \, dx$

Turn over.

5. (2 points) Evaluate the indefinite integral: $\int x \arcsin x \, dx$

6. (4 points) Use two different methods to evaluate $\int \sin(x) \cos(4x) \, dx$.

(a) Use a product-to-sum trig identity.

(b) Use integration by parts (twice).