

NAME: _____ ID: _____ Section: _____

Exercise 1 (6 points)

A snowball melts so that its surface area decreases at a rate of 1cm/min. Find the rate at which the diameter is decreasing when the diameter is 10 cm.

Exercise 2 (4 points)

Differentiate the function $y = (\sin x)^x$ (**show all your steps**)

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Exercise 1 (4 points)

Differentiate the function $y = x \tanh^{-1} x + \ln \sqrt{1-x^2}$ (**show all your steps**)

Exercise 2 (6 points)

A snowball melts so that its surface area decreases at a rate of 2 cm/min. Find the rate at which the diameter is decreasing when the diameter is 15 cm.