Math 130 Day 23/24 Extra Credit. Name:

As we saw in class on Friday (see the online class notes from Day 23), finding the derivatives of inverse trig functions is easy using implicit differentiation. To determine the derivative rule for $y = \arccos x$, start with

 $y = \arccos x$

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=

We want to find $\frac{dy}{dx}$. Apply the appropriate inverse function to both sides

Simplify the right side

Now take the derivative using implicit differentiation

 $\frac{dy}{dx} \begin{bmatrix} & & \\ & \end{bmatrix} = \frac{dy}{dx} \begin{bmatrix} & \\ & \end{bmatrix}$

Work out the derivatives of both sides

Solve for $\frac{dy}{dx}$

 $\frac{dy}{dx} =$

=

Now substitute for y

 $\frac{dy}{dx} =$

Finally, use a triangle to ensure that your final answer contains no trig or inverse trig function.

Final answer: $\frac{dy}{dx}(\arccos x) = \frac{dy}{dx} =$