MATH 251 (PHILLIPS) QUIZ 3, Tuesday 13 May 2025. 20 minutes; 20 points.

NAME: _____   Student id: _____

Standard exam instructions apply. In particular, no calculators, no communication devices, and no notes except a 3×5 file card, written on both sides. Also, all notation must be correct, with "=", "lim", etc. everywhere they are supposed to be, and nowhere they are not supposed to be. Write answers on this page. Use the back if necessary.

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1. (20 points) If $\cos(y) = (4x - y)^3 - \arctan(17)$, find $\dfrac{dy}{dx}$ by implicit differentiation. (You must solve for $\dfrac{dy}{dx}$.)