Name: ———————————————————————————— ————— / 25

There are 25 points possible on this quiz. No aids (book, calculator, etc.) are permitted. **Show all work for full credit.**

1. [12 points] Find $\dfrac{dy}{dx}$. You do not have to simplify

    a. $y = 1 - 2x + x\sec(x)$

    b. $y = 8u^3,\ u = \tan(x)$

    c. $y = \dfrac{20}{\sqrt{x^3 - 2x}}$

    d. $y = \left(x + \cos\left(\frac{x}{\pi}\right)\right)^5$

2. [5 points] Use the chart to determine the derivative of $h(x) = f(x^2 + 1) - (g(x))^2$ at $x = 1$.

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
0	2	-1	0	1
1	1	2	3	4
2	-1	-2	-3	-4
3	0	4	3	2

3. [8 points] Given $f(x) = (3x - 8)^6 - 17x$

    a. Find $f'(x)$

    b. Find all x-values when the tangent line to f is parallel to $y = x - 2$.