

Double Trouble [a pair activity]

2011doubletrouble.doc



All of the following problems require you to use at least two different differentiation rules. Like the Weasley twins, they might be trouble! Show ALL steps and use standard mathematical notation.

Find the derivative of the following functions:

1. $y = \sqrt{x^2 + 1} \sin(2x)$

2. $f(x) = \sin^2(\pi x)$

3. $g(x) = \cos^4\left(\sqrt{\pi x}\right)$

4. $h(x) = \frac{\sqrt{x^4 + 4}}{\cot x}$

5. $y = \frac{x^3 + 1}{\sec(2\pi x)}$

6. $h(x) = \frac{f(20x)}{g(11x)}$

7. $f(t) = g(5t)h(2t) - h(5t)g(2t) + g^2(t)h^3(t)$

8. Find $\frac{dy}{dx}$

$\cos(xy) = xy$