

SECTION 3-6: THE CHAIN RULE

1. Recall Two Versions of the Chain Rule

2. Understanding what the “formulas” in the book are trying to communicate:

3. $h(x) = \frac{2x(2x+1)^5}{\cos(2x+1)}$

4. Find all x -values where the tangent to $f(x) = (x^2 - 4)^3$ is horizontal.

5. Use the table below to evaluate the derivatives of the given functions at the indicated value.

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

(a) $h(x) = f(g(x) - 2x)$ at $a = 2$.

(b) $k(x) = \left(\frac{f(x)}{g(x^2)}\right)^2$ at $a = 1$