

Product Rule

1) If $f(x) = (x)(x)$, $f'(x) = \underline{(x)(1)+(1)(x)}$

3) If $f(x) = (3)(x^2)$, $f'(x) = \underline{\quad} + \underline{\quad}$

2) If $f(x) = (\frac{1}{2}x^2)(\frac{1}{3}x^3)$, $f'(x) = \underline{\quad} + \underline{\quad}$

4) If $f(x) = (x^2)(x^3)$, $f'(x) = \underline{\quad} + \underline{\quad}$

5) If $f(x) = (x^3 + x^2)(4x^2 + 4)$, $f'(x) = \underline{\hspace{10cm}}$

6) If $f(x) = (-2x^4 - 2x^2)(20x - 2)$, $f'(x) = \underline{\hspace{10cm}}$

7) If $f(x) = (x + 321)(\frac{1}{3}x^3 - \frac{1}{2}x^2)$, $f'(x) = \underline{\hspace{10cm}}$

8) If $f(x) = (\frac{3}{2}x^2 - 2x)(\frac{5}{4}x^4 + \frac{4}{3}x^3)$, $f'(x) = \underline{\hspace{10cm}}$

9) If $f(x) = (x^2 - 1)(x^2 - 1)$, $f'(x) = \underline{\hspace{10cm}}$

Using the Product Rule in reverse. Anti-differentiation!

10) If $f'(x) = 3x(3x^2) + (3)x^3$, $f(x) = (\underline{\hspace{2cm}})(\underline{\hspace{2cm}})$

11) If $f'(x) = (2x)(2x) + (2)(x^2)$, $f(x) = \underline{\hspace{10cm}}$

Write the rule in your own words.

Make a diagram of the rule in a way you can jot down on the test.