Name: _____   Date: _____

Fill in the following derivative rules:

1. Product Rule: $\dfrac{d}{dx} f(x)g(x)$

2. Quotient Rule: $\dfrac{d}{dx}\dfrac{f(x)}{g(x)}$

Determine each of the following derivatives:

3. $\dfrac{d}{dx}(4x^{91} + 5x^{-9} + 4e^{2x})$

4. $\dfrac{d}{dx}\left[(3x^4 - 8x^3 + 3)(e^{4x} - 6e^{-6x})\right]$

5. $\dfrac{d}{dx}\dfrac{-5x^4 + 7x^2 + 1}{9x^{20} - 7x^6}$