D-AD5 1. Find $\frac{dy}{dx}$ for $4x + 2x^2y = 2y^2$

2. (Show all work) If $x + 2xy - y^2 = 2$, then at the point $(1,1)\frac{dy}{dx}$ is

(A) $\frac{3}{2}$ (B) $\frac{1}{2}$ (C) 0 (D) $-\frac{3}{2}$ (E) nonexistent

D-AD4 Find the derivative of the functions below. Simplify your answers. 3. $y = \log_5 \cos(2x)$

4. $f(x) = 2e^{\ln(4x)}$

5. $y = x^2 e^{2x}$