Name:_____ Date:_____

AP Calc: Higher Order Derivatives Ms. Loughran

1. Given: $y = 6x^3 - 4x^2 + 2x$. Find $\frac{d^2y}{dx^2}$.

2. Given: $y = \frac{x^{-4}}{8} + \frac{3x^{-2}}{2}$. Find *y*".

3. Given: $y = 3x^4 - 2x^2$. Find $\frac{d^2y}{dx^2}$ at *x* = 1.

4. Given: $y = \frac{x^2+3}{2x}$. Find $\frac{d^2y}{dx^2}$

Find the first four derivatives of the function.

5. $y = x^4 + x^3 - 2x^2 + x - 5$

6. $y = x^2 + x + 3$

7. $y = x^{-1} + x^2$

8. $y = \frac{x+1}{x}$