Using the Power Rule to Find Slope

Use the Power Rule to find the derivative for each of the following functions:

1) $f(x) = 3x^2 + 2x$

2) $f(x) = 2x^2 - 3x + 1$

3) $f(x) = -2x^5 + 9x^4 - 5x^3 + 7x^2 - 4x - 11$

4) $f(x) = \frac{6}{x^2} - \frac{4}{x} - 5$

5) $f(x) = \frac{-3}{x^4} + \frac{4}{x^2} - 5x$

Find the slope of each function at the indicated point

6) $f(x) = -3x^4 + 4x^2 - 5x$ at $x = 2$ and -2

7) $f(x) = \frac{-3}{x^4} + \frac{4}{x^2} - 5x$ at $x = 1$ and -1

8) $f(x) = 7x^3 - 9x^2 - 2x + 3$ at $x = 0$ and 1

Find the points on the graph at which the slope is zero. Indicate if it is a maximum or a minimum.

9) $f(x)=\frac{1}{3}x^3-2x^2+3x-1$

10) $f(x)=\frac{2x^3}{3}-\frac{x^2}{2}-3x+4$