AP Calculus AB Name_____ ID: 1

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Hwk Concavity and 2nd Derivative Test

Date_____ Period____

For each problem, find the open intervals where the function is concave up and concave down.

1) $f(x) = \dfrac{3}{x-3}$

2) $f(x) = -(4x+24)^{\frac{1}{2}}$

3) $f(x) = \dfrac{x^2}{2} - x - \dfrac{11}{2}$

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4) $f(x) = 2\cos(x)$; $[-\pi, \pi]$

5) $f(x) = \sec(x)$; $[-\pi, \pi]$

Use the 2nd Derivative Test to find all relative extrema. State if the extrema is a Maximum, Minimum or Neither.

6) $y = 2\cos(2x)$; $[-\pi, \pi]$

7) $y = x^4 - 2x^2 - 4$

8) $y = x^3 - 3x^2 - 1$

9) $y = -\dfrac{x^2}{4x + 8}$

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