Name: _____ Date: _____
AP Calc AB: Second Derivative Test Ms. Loughran

Do Now:

For 1and 2, locate the relative extrema of each.

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

2. $f(x) = \cos x$

3. Find the open interval on which f is concave up and on which f is concave down:
$f(x) = x^3 - 8x^2 + 5$

Second Derivative Test:

1.

2.

Note:

Using the second derivative test, find the local extreme values of each.

1. $f(x) = x^3 - 12x - 5$

2. $f(x) = 3x - x^3 + 5$

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

4. $y = xe^x$

5. $y = x^5 - 80x + 100$

6. $y = 3x^5 - 25x^3 + 60x + 20$

7. $y = xe^{-x}$