Date: _____

2nd Derivative Test

1st Derivative Test
f has rel. max/rel. min

2nd Derivative Test

If c is a critical number of f and $f''(x)$ exists,

① if $f''(c) > 0$, then

② if $f''(c) < 0$, then

③ if $f''(c) = 0$, then

Using the 2nd Derivative Test

Example 1:
Find the relative maximums and relative minimums of $f(x)$.

$f(x) = 2x^3 + 3x^2 - 12x$

Example 2:

Find the x-coordinate(s) where $f(x)$ has relative maximum(s) and relative minimum(s).

$f(x) = x^2 e^x$

Example 3:

Find the relative maximums and relative minimums of $f(x)$.

$f(x) = x^{2/3}$