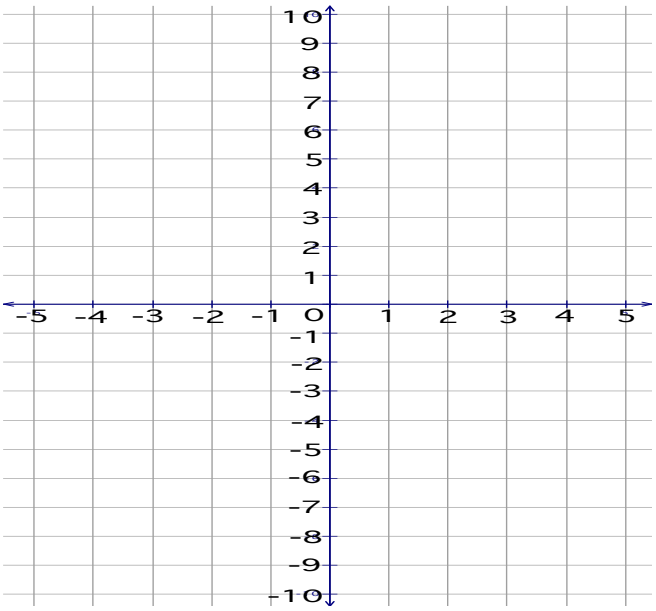
Calculus CH.3 Review #2 **Name :** _____ **Per :** _____

Note all relevant properties of f and sketch the graph (Label the maximum, minimum and inflection points)

1) $f(x) = 6x^2 - x^4$

$x-$int $y-$int v.asym. h.asym. rel.max. rel.min. inc. dec. inf .pts. conc.up conc.down



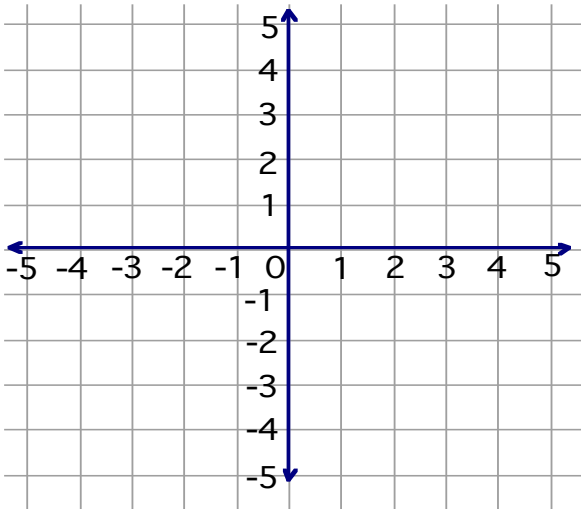
Sketch each graph (Label the maximum, minimum and inflection points)

2)

$x-$int	$y-$int	v.asym.	h.asym.
$x = -5, 0, 5$	$(0,0)$	none	none

rel.max.	rel.min.	inc.	dec.
$(4,5)$	$(-4,-5)$	$(-4,4)$	$(-\infty,-4)$ $(4,\infty)$

inf .pts.	conc.up	conc.down
$(-2,-2)$ $(0,0)$ $(2,2)$	$(-\infty,-2)$ $(0,2)$	$(-2,0)$ $(2,\infty)$

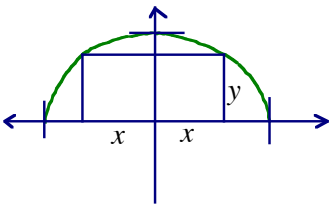


3) If $f(x) = 2x^3 - 5x^2 + 8$, and $x_1 = 2$. Use Newton's Method to find the third approximation x_3.

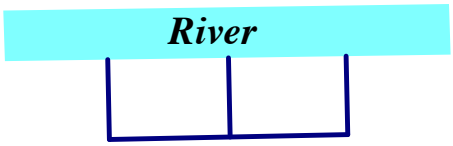
4) A rectangle is bounded by the x-axis and the equation $y = \sqrt{200 - x^2}$.

a) What length and width should the region be so that its area is a maximum? _____

b) What is the area? _____



5) A farmer plans to fence two rectangular pastures adjacent to a river. The farmer needs an enclosure that has an area of 800ft^2. What dimensions should be used so that the farmer uses the least amount of fence?_____ How much fence is needed?_____



6) A crate open at the top has vertical sides, a square bottom, and a surface area of 192 m^2.

a) Find the dimensions that give the crate maximum volume. _____

b) What is the maximum volume? _____