AP Calculus AB Review Chapter 4 Test 2

p. 282 1, 5, 7, 13, 29, 53, 54
p. 263 13

Additional problems
**Study example 5 on p. 261.
1. Now, suppose the radius of the circle was 4, i.e. equation of the semicircle was
y = $\sqrt{16-x^2}$
Calculate the area of the largest rectangle that can be inscribed in this circle.

2. Find the critical values of $f(x) = x^4 + 4x^3 - 2$
   a) Find all relative extrema.
   b) Find the value(s) of c guaranteed by MVT on the interval from [-2, 1]

3. Find all asymptotes and extrema of $y = \frac{x^2}{x^2 - 4x + 3}$

4. Sketch a graph of a function with the given properties.

x	-1	0	1	(-∞, -1)	(0, 1)	(-1, 0)	(1, ∞)	(-∞, 0)	(0, ∞,)
f	-1	0	1						
f'				+	+	-	-		
f''								-	-

5. a) You have 40 linear feet of fencing with witch to enclose a rectangular space for a garden. Find the largest possible area that can be enclosed with this much fencing and the dimensions.
Ans: 10x10
b) Suppose one side is protected by a barn. Now find the dimensions and largest area that can be enclosed.

6. Square of equal sides are cut out of a 10x16 rectangle. The sides are folded up to form a box with an open top. What are the dimensions of the squares to form the largest possible volume?

7. Given the table below Find the acceleration at t = 8 sec.

Time (seconds)	0	6	12	18
Velocity (m/s)	50	30	18	0