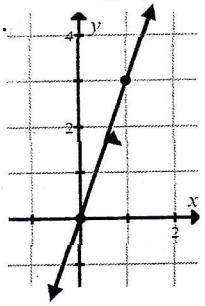
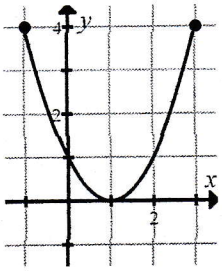
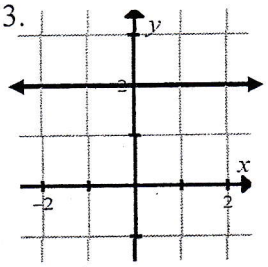
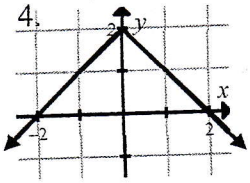
Assignment 5-4

Sketch a graph of the derivative of the function whose graph is shown.

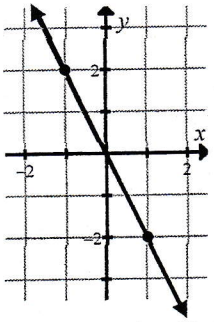
1. 

2. 

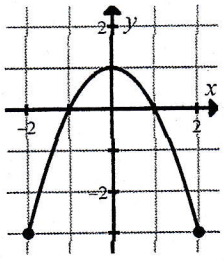
3. 

4. 

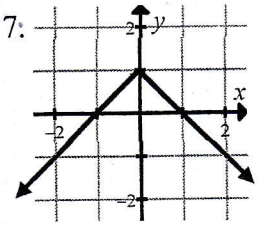
Use the graph of f' shown and the given starting point to graph f (the antiderivative).

5. 

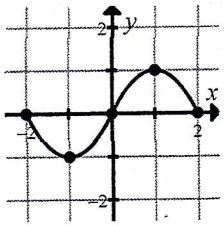
starting point (0,0)

6. 

starting point (1,2)

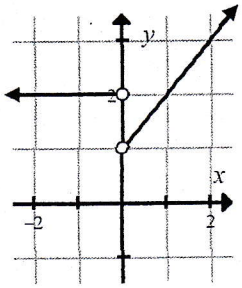
7. 

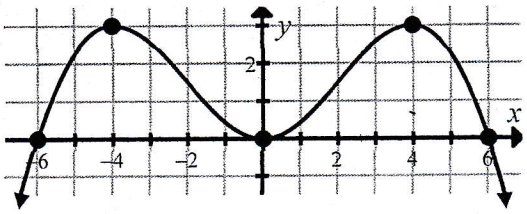
starting point $(-1,2)$

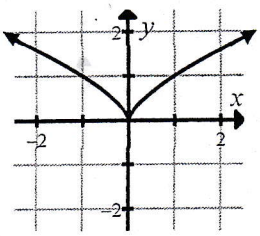
8. 

starting point (0,0)

Use the graph of f' shown to sketch a graph of f'' and a possible graph of f.

9. 

10. 

11. 

12. Find the vertical asymptotes, end behavior, and relative extrema. Then graph $f(x)=\dfrac{1}{x^2-2x-8}$ without using a calculator.

13. If $f(x)=x(x-4)^3$, find relative extrema points and points of inflection. Then graph f without using a calculator. Hint: $f''(x)=12(x-4)(x-2)$.

14. Use the Second Derivative Test to find the relative extrema points of $f(x)=x^3-3x^2-5$.

15. Use the following information to sketch a possible graph of f.
$f(0)=f(4)=0,\ f(2)=-2,$
$f'(x)<0$ when $x<2,\ f'(x)>0$ when $x>2,\ f'(2)$ does not exist,
$f''(x)<0$ when $x\neq 2$

16. Find the c-value guaranteed by the Mean Value Theorem for $f(x)=x^3-2x+3$ on the interval $[0,2]$.

17. Find the absolute minimum and absolute maximum of the function $f(x)=x^3-12x-2$ on the interval $[0,4]$ without using a calculator.