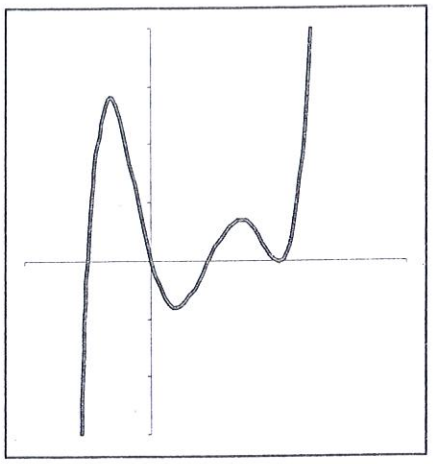
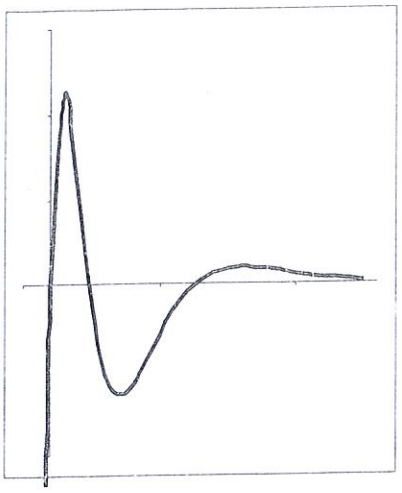
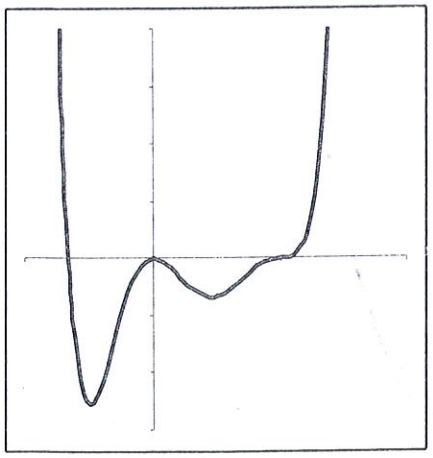
In each column of graphs you will need to determine which is $f(x)$, $f'(x)$ and $f''(x)$.



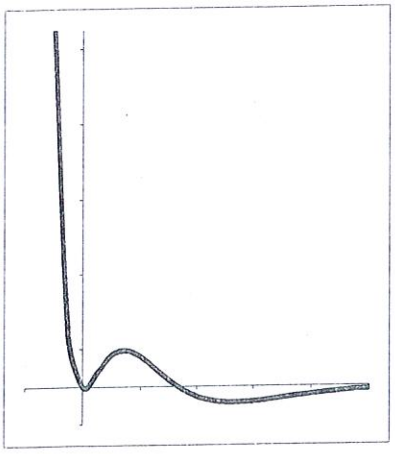
f'(x)



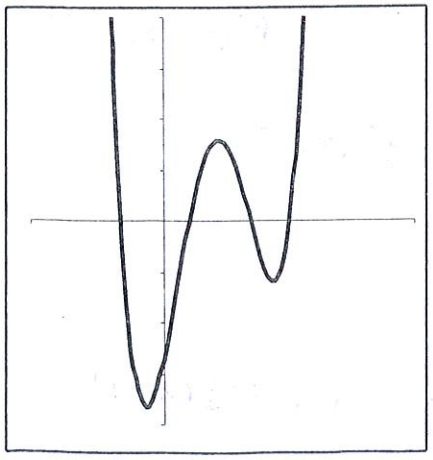
f''(x)



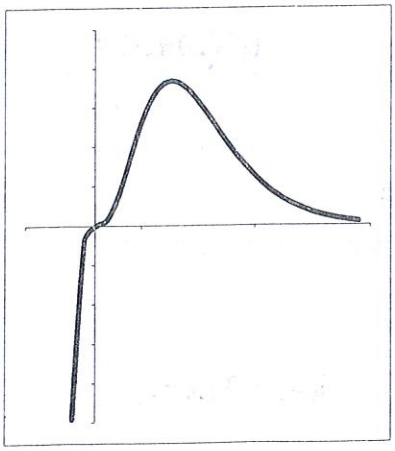
f(x)



f'(x)



f''(x)



f(x)

U2H2

1. If $f(2)=3$ and $f'(2)=5$, find an equation of:

a. The tangent line at the point where $x=2$.

pt=(2,3)

slope = 5

$y-3=5(x-2)$

b. The normal line at the point where $x=2$. ← perpendicular

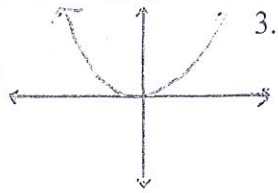
pt = (2,3)

slope = $-\frac{1}{5}$

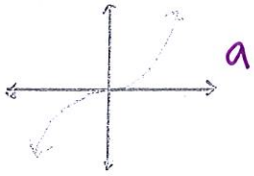
$y-3=-\frac{1}{5}(x-2)$

Match the graph of the function on the left with the graph of the derivative on the right.

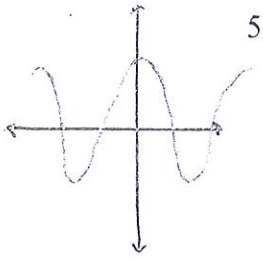
2. b



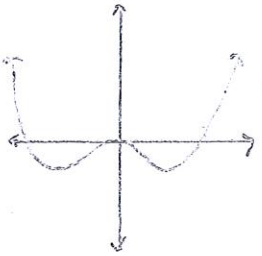
3. a



4. d

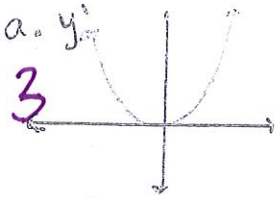


5. c



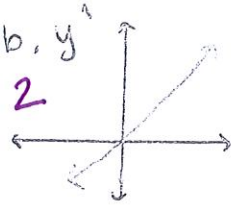
a. y'

3



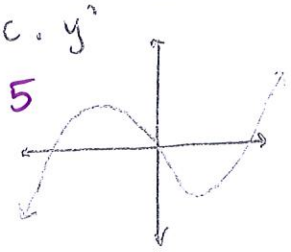
b. y'

2



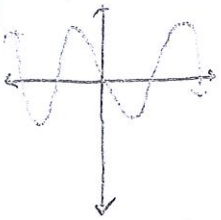
c. y'

5



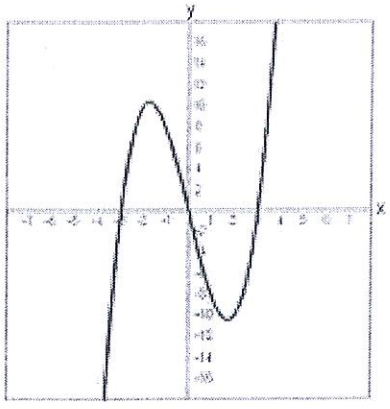
d. y'

4

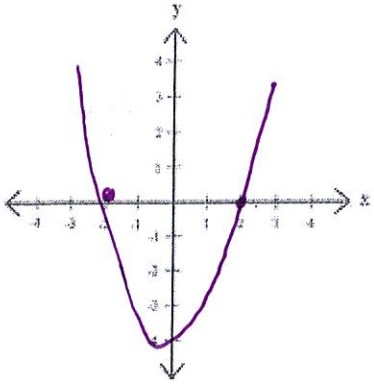


6. Sketch a graph of the derivative of the function f.

$f=$



$f'=$



Find the derivative of the given function at the indicated point using your graphing calculator.

7. $y=2x^2+3,\ x=.045$ y'(.045) =

8. $f(x)=2x^2+3,\ x=-3.8$ f'(-3.8)

9. $f(x)=\sqrt{x+1},\ x=3$

f'(3) =

10. $y=\frac{5}{x},\ x=6$ y'(6) =

11. Find the derivative of the function $y=x^3$ and use it to find an equation of :

a. The tangent line at the point (1, 1).

pt=(1,1)

slope = 3

$y-1=3(x-1)$

b. The normal line at the point (1, 1).

pt (1,1)

slope = $-\frac{1}{3}$

$y-1=-\frac{1}{3}(x-1)$