

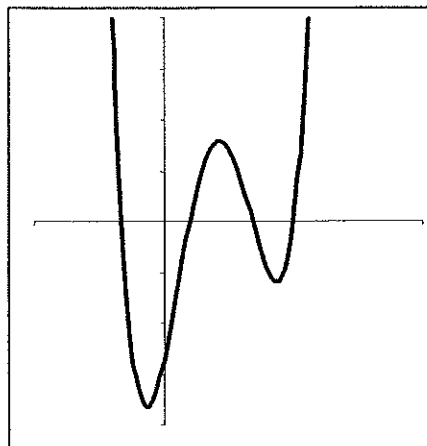
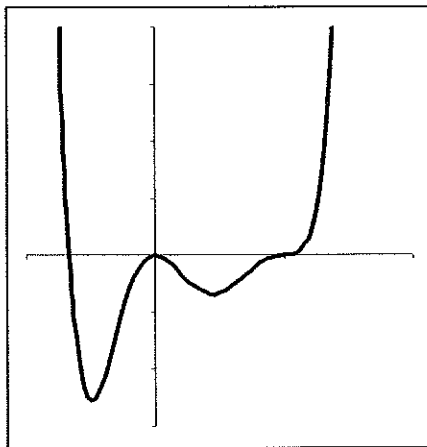
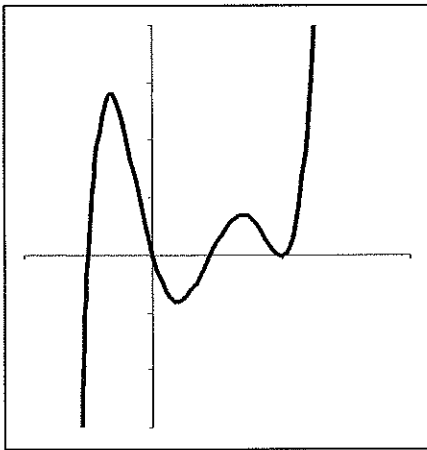
#14 FIRST AND SECOND DERIVATIVES 2.5

COMPLETE EACH BLANK WITH THE BEST ANSWER.

1. If $f(x)$ is increasing, then $f'(x)$ is _____.
2. $f'(x)$ is negative if $f(x)$ is _____.
3. $f''(x)$ is positive if $f(x)$ is _____.
4. $f''(x)$ is negative if $f'(x)$ is _____.
5. If $f(x)$ is concave down, then $f'(x)$ is _____.
6. If $f'(x)$ is increasing, then $f''(x)$ is _____.
7. If $f'(x)$ is decreasing, then $f(x)$ is _____.
8. If $f'(x) > 0$ and $f''(x) < 0$, then $f(x)$ looks like _____ [DRAW A SKETCH].
9. If $f(x)$ is an exponential decay curve, then $f'(x)$ is _____ and _____.
10. If $f(x)$ has an inflection point, then $f(x)$ has a change in _____.
11. If $f(x)$ has a horizontal tangent, then $f'(x)$ has a _____.
12. If $f'(a) = 0$, then $f(x)$ has a _____ at _____.
13. If $f'(x)$ has a change of sign and is always defined, then $f(x)$ has either a _____ or _____.
14. If $f(x)$ has a corner at $x = a$, then $f'(a)$ is _____.
15. If $f'(x) = 0$ for all values of x , then $f(x)$ is _____.
16. If $f''(x) = 0$ for all values of x , then $f(x)$ is _____.
17. If $f'(a) = 2$ and $g(x) = f(x) - 5$, then $g'(a) =$ _____.
18. If $f(x)$ is concave down everywhere, then $-f(x)$ is _____.
19. If the slope of $f(x)$ increases, then $f(x)$ is _____.
20. If $f''(x)$ has an x-intercept, then $f'(x)$ has a _____.
21. If $f(x)$ has a vertical tangent at $x = a$, then $f'(a)$ is _____.

IN EACH **COLUMN** OF GRAPHS YOU WILL NEED TO DETERMINE WHICH IS $f(x)$, $f'(x)$ AND $f''(x)$. INCLUDE YOUR REASONING

22.



23.

