Name: _____.
Period: ____.

Connecting f, $f'(x)$, $f''(x)$

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 concaved 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 _____.

9. If the slope of $f(x)$ increases, then $f(x)$ is _____.

10. If $f(x)$ is a decay curve, then $f'(x)$ is _____ and _____.

11. If $f(x)$ has an inflection point, then $f(x)$ has a change in _____.

12. If $f(x)$ has a horizontal tangent, then $f'(x)$ has a _____.

13. If $f''(x)$ has an x-intercept, then $f'(x)$ has a _____.

14. If $f'(a) = 0$, then $f(x)$ has a _____ at _____.

15. If $f'(x)$ has a change of sign and is always defined,
then $f(x)$ has either a _____ or _____.

16. If $f(x)$ has a corner at $x = a$, then $f'(a)$ is _____.

17. If $f(x)$ has a vertical tangent at $x = a$, the $f'(a)$ is _____.

Name: _____.
Period: ____.

Connecting f, $f'(x)$, $f''(x)$

1. If $f(x)$ is increasing, then $f'(x)$ is positive.
2. $f'(x)$ is negative if $f(x)$ is decreasing.
3. $f''(x)$ is positive if $f(x)$ is CC↑.
4. $f''(x)$ is negative if $f'(x)$ is decreasing.
5. If $f(x)$ is concaved down, then $f'(x)$ is decreasing.
6. If $f'(x)$ is increasing then $f''(x)$ is positive.
7. If $f'(x)$ is decreasing then $f(x)$ is CC↓.
8. If $f'(x) > 0$ and $f''(x) < 0$, then $f(x)$ looks like  .
9. If the slope of $f(x)$ increases, then $f(x)$ is CC↑.
10. If $f(x)$ is a decay curve, then $f'(x)$ is negative and increasing.
11. If $f(x)$ has an inflection point, then $f(x)$ has a change in Concavity.
12. If $f(x)$ has a horizontal tangent, then $f'(x)$ has a zero or critical point.
13. If $f''(x)$ has an x-intercept, then $f'(x)$ has a max or min.
14. If $f'(a) = 0$, then $f(x)$ has a critical pt. at $x = a$.
15. If $f'(x)$ has a change of sign and is always defined, then $f(x)$ has either a max or min.
16. If $f(x)$ has a corner at $x = a$, then $f'(a)$ is undefined.
17. If $f(x)$ has a vertical tangent at $x = a$, the $f'(a)$ is undefined.