$\qquad$

1. If $f(x)$ is increasing, then $f^{\prime}(x)$ is $\qquad$ .
2. $f^{\prime}(x)$ is negative if $f(x)$ is $\qquad$ .
3. $f^{\prime \prime}(x)$ is positive if $f(x)$ is $\qquad$ .
4. $f^{\prime \prime}(x)$ is negative if $f^{\prime}(x)$ is $\qquad$ .
5. If $f(x)$ is concave down, then $f^{\prime}(x)$ is $\qquad$ .
6. If $f^{\prime}(x)$ is increasing, then $f^{\prime \prime}(x)$ is $\qquad$ .
7. If $f^{\prime}(x)$ is decreasing, then $f(x)$ is $\qquad$ .
8. If $f^{\prime}(x)>0$ and $f^{\prime \prime}(x)<0$, then $f(x)$ looks like $\qquad$ .
9. If $f(x)$ is an exponential decay curve, then $f^{\prime}(x)$ is $\qquad$ and
$\qquad$ .
10. If $f(x)$ has an inflection point, then $f(x)$ has a change in $\qquad$ .
11. If $f(x)$ has a horizontal tangent, then $f^{\prime}(x)$ has a $\qquad$ .
12. If $f^{\prime}(a)=0$, then $f(x)$ has a $\qquad$ at $\qquad$ .
13. If $f^{\prime}(x)$ has a change of sign and is always defined, then $f(x)$ has either a $\qquad$ or $\qquad$ -.
14. If $f(x)$ has a corner at $x=a$, then $f^{\prime}(a)$ is $\qquad$ .
15. If $f^{\prime}(x)=0$ for all values of $x$, then $f(x)$ is $\qquad$ .
16. If $f^{\prime \prime}(x)=0$ for all values of $x$, then $f(x)$ is $\qquad$ .
17. If $f^{\prime}(a)=2$ and $g(x)=f(x)-5$, then $g^{\prime}(a)=$ $\qquad$ .
18. If $f(x)$ is concave down everywhere, then $-f(x)$ is $\qquad$ .
