Using properties of $f, f^{\prime}$, and $f^{\prime \prime}$ to sketch $f$ on the interval $[-1,1]$.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| $f(t)$ is positive $f(t)$ is increasing $f(t)$ is concave up | $f(t)$ is positive $f(t)$ is increasing $f(t)$ is concave down | $f(t)$ is negative $f(t)$ is decreasing $f(t)$ is concave up | $f(t)$ is positive $f(t)$ is decreasing $f(t)$ is concave down |
|  $\begin{aligned} f(t) & >0 \\ f^{\prime}(t) & <0 \end{aligned}$ <br> (so $f(t)$ is $\qquad$ ) $f^{\prime \prime}(t)>0$ <br> (so $f(t)$ is ) $\qquad$ |  $\begin{aligned} f(t) & <0 \\ f^{\prime}(t) & >0 \end{aligned}$ <br> (so $f(t)$ is $\qquad$ ) $f^{\prime \prime}(t)<0$ <br> (so $f(t)$ is $\qquad$ |  $\begin{aligned} f(t) & <0 \\ f^{\prime}(t) & >0 \end{aligned}$ <br> (so $f(t)$ is $\qquad$ $f^{\prime}(t)$ is increasing (so $f^{\prime \prime}(t)$ $\qquad$ ) |  $f(t)<0$ <br> $f(t)$ is decreasing (so $f^{\prime}(t)$ $\qquad$ ) <br> $f^{\prime}(t)$ is decreasing (so $f^{\prime \prime}(t) \_$and $f(t)$ is $\qquad$ |
|  <br> $f(t)$ is negative $f(t)$ is increasing (so $f^{\prime}(t)$ <br> $f^{\prime}(t)$ is decreasing (so $f^{\prime \prime}(t) \_$and $f(t)$ is $\qquad$ |  <br> $f(t)$ is positive $f(t)$ is decreasing (so $f^{\prime}(t)$ $\qquad$ ) <br> $f^{\prime}(t)$ is increasing (so $f(t)$ is $\qquad$ |  $\begin{aligned} f(t) & >0 \\ f^{\prime}(t) & <0 \\ f^{\prime \prime}(t) & <0 \end{aligned}$ |  $\begin{aligned} f(t) & <0 \\ f^{\prime}(t) & >0 \\ f^{\prime \prime}(t) & >0 \end{aligned}$ |
|  $f(t)<0$ <br> $f(t)$ is decreasing $f^{\prime}(t)$ is decreasing |  $f^{\prime}(t)>0$ <br> $f(t)$ is positive $f^{\prime}(t)$ is increasing |  $\begin{gathered} f^{\prime}(t)>0 \\ f(t)>0 \\ f^{\prime \prime}(t)<0 \end{gathered}$ |  <br> $f(t)$ is decreasing $f^{\prime}(t)$ is increasing $f(t)$ is negative |

