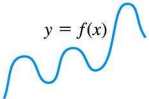
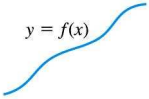
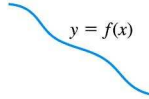
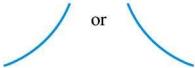







Strategy for Graphing $y = f(x)$

1. Identify the domain of f and any symmetries the curve may have.
2. Find y' and y'' .
3. Find the critical points of f , and identify the function's behavior at each one.
4. Find where the curve is increasing and where it is decreasing.
5. Find the points of inflection, if any occur, and determine the concavity of the curve.
6. Identify any asymptotes.
7. Plot key points, such as the intercepts and the points found in Steps 3–5, and sketch the curve.

 <p>$y = f(x)$</p> <p>Differentiable \Rightarrow smooth, connected; graph may rise and fall</p>	 <p>$y = f(x)$</p> <p>$y' > 0 \Rightarrow$ rises from left to right; may be wavy</p>	 <p>$y = f(x)$</p> <p>$y' < 0 \Rightarrow$ falls from left to right; may be wavy</p>
 <p>or</p> <p>$y'' > 0 \Rightarrow$ concave up throughout; no waves; graph may rise or fall</p>	 <p>or</p> <p>$y'' < 0 \Rightarrow$ concave down throughout; no waves; graph may rise or fall</p>	 <p>y'' changes sign Inflection point</p>
 <p>or</p> <p>y' changes sign \Rightarrow graph has local maximum or local minimum</p>	 <p>$y' = 0$ and $y'' < 0$ at a point; graph has local maximum</p>	 <p>$y' = 0$ and $y'' > 0$ at a point; graph has local minimum</p>