

EXAMPLE 1 A warm-up Given the following information about the first and second derivatives of a function f that is continuous on $(-\infty, \infty)$, summarize the information using a sign graph, and then sketch a possible graph of f .

$$\begin{array}{lll}
 f' < 0, f'' > 0 \text{ on } (-\infty, 0) & f' > 0, f'' > 0 \text{ on } (0, 1) & f' > 0, f'' < 0 \text{ on } (1, 2) \\
 f' < 0, f'' < 0 \text{ on } (2, 3) & f' < 0, f'' > 0 \text{ on } (3, 4) & f' > 0, f'' > 0 \text{ on } (4, \infty)
 \end{array}$$

} conditions

