Problem 46, Section 4.1

Refer to the figures for Exercises 45-48 on page 259 of your text. We are asked to match the graph of the function in 46 to one of the graphs of derivatives in (a)-(d).

Well, obviously, the graph in 46 is smooth - it has no points of discontinuity, vertical tangents, or corners. Thus, its derivative should be continuous. So we can rule out (a) and (b). The graph in 46 is obviously increasing on $(-\infty, 0)$, so its derivative should be positive on that interval. Because (d) is negative on that interval, we know that the only possibility is (c).