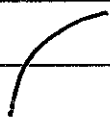


4.3 The Four Shapes

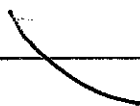
Every graph is composed of pieces that can have 4 shapes:



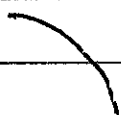
increasing, $f'(x) > 0$
concave up, $f''(x) > 0$



increasing, $f'(x) > 0$
concave down, $f''(x) < 0$



decreasing, $f'(x) < 0$
concave up, $f''(x) > 0$



decreasing, $f'(x) < 0$
concave down, $f''(x) < 0$