

For Exercises 18 – 25, find $f''(x)$. Then evaluate $f''(0)$, $f''(1)$, and $f''(4)$, if they exist.

18. $f(x) = x^3 + x^2 + 3$

19. $f(x) = x^3 - x^2 + 7$

20. $f(x) = x^2 - 5\sqrt{x} + 1$

21. $f(x) = x^2 + 2\sqrt{x} - 3$

22. $f(x) = \sqrt{x-4}$

23. $f(x) = \sqrt{2x+1}$

24. $f(x) = \frac{x}{x+5}$

25. $f(x) = \frac{x-2}{x+4}$

In Exercises 26 – 29, find all inflection points. Apply the Second Derivative Test at possible maximum/minimum points. Make a sketch of the graph and confirm your results with a graphing calculator.

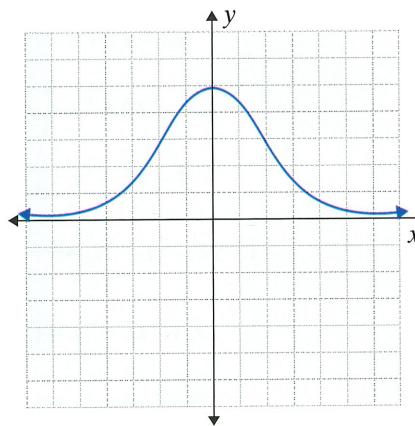
26. $f(x) = (x+5)\sqrt[3]{x}$

27. $f(x) = (x^2+1)\sqrt[3]{x}$

28. $f(x) = 2x\sqrt[3]{x+1}$

29. $f(x) = (x+10)\sqrt[3]{x^2+10}$

30. Sketch y and y' on the same coordinate axis using the graph of y (figure at the right). Show how to locate inflection points using y' .



31. Given $f(x)$ as shown, graph a possible $f'(x)$ on the same axis. Show the inflection points.

