Name_____Date_____Class_____

Day #15 Homework

For exercises $1-3$, determine on what intervals the given function is increasing or decreasing. Also, identify the coordinates of any relative extrema of the function. Show your work and justify your reasoning.

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1. $f(x) = 2x^3 + 3x^2 - 12x$

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2. $g(x) = x^3 - 6x^2 + 15$

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3. $h(x) = (x + 2)^2(x - 1)$

4. Pictured to the right is the graph of $f\,'(x)$. On what interval(s) is the graph of $f(x)$ increasing or decreasing? Justify your reasoning.
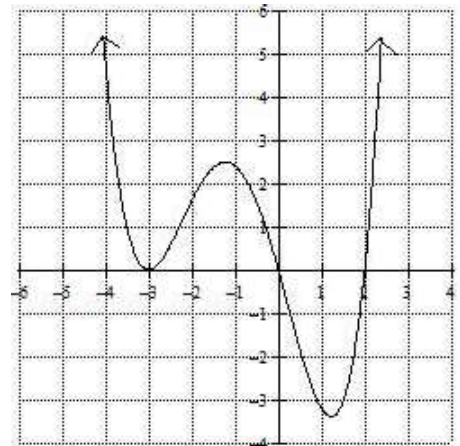
5. Pictured to the right is the graph of $f\,'(x)$. At what value(s) of x does the graph of $f(x)$ have a relative maximum/minimum? Justify your reasoning.