Problems (From Chapters 4 and 5 of Stewart). Please write solutions to the following problems:

Section 4.9: 4.9.54.
Section 5.1: 5.1.26. (See the lecture notes for Monday 11/26 where I work out a similar example.)
Section 5.3: 5.3.74.

Challenge Problem. Find a polynomial $P(x)$ of degree 5 so that

$$P(x) - P'(x) = x^5.$$

Can you write down a formula for a polynomial $Q(x)$ of degree $n$ so that $Q(x) - Q'(x) = x^n$?

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Homework guidelines, from the syllabus: Please write your name clearly on your homework, and please staple multiple pages. To receive full credit, you must show your work and justify your answers. Please turn in your homework to the box outside the lecture hall. All problems (including “challenge problems”) are weighted equally. Challenge problems will be significantly more difficult than the rest of the homework, and you should not worry if you do not solve them.