U.S. Coal Use

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Figure : Annual U.S. coal consumption in metric tons with fitted curve $Con(x)=506277.225313905 + 13449.9175773923x +446.256437587651x\^2 -1.39191623751436x\^3-0.254735958081333x\^4$

Figure : Annual U.S. coal production in metric tons with fitted curves, $Prod(x)=553134.350155957 + 24895.3680639253x -440.030527098651x\^2 +20.7034466812164x\^3-0.430029628755443x\^4$

Answer the following questions using the fitted curve, $Con\left(x\right)=506277.225313905 + 13449.9175773923x +446.256437587651x^{2}-1.39191623751436x\^3 -0.254735958081333x\^4$represented in Figure 1 and, $Prod\left(x\right)=553134.350155957 + 24895.3680639253x-440.030527098651x\^2 +20.7034466812164x\^3 -0.430029628755443x\^4$ represented in Figure 2.

1. Find models for U.S. coal consumption and production. [Either delete this question or the figures, in which case provide the data.]
2. According to the models when did consumption and production peak? Do the models accurately represent the data?
3. When do the models predict that consumption and production will be 0 metric tons?
4. How quickly was consumption and production decreasing in 2021 (last year of the data)?
5. If we assume consumption and production continue to decrease at the 2021 rates, then when will they reach 0 metric tons?
6. Summarize your results in a short paragraph and, in particular, include commentary regarding your predictions about when production and consumption will reach 0 metric tons. Incorporate information from this article in your summary: <https://www.nytimes.com/2016/06/11/business/energy-environment/coal-production-decline.html> How would you need to updated the NYT article given the information from this project? Has this article aged well or not?