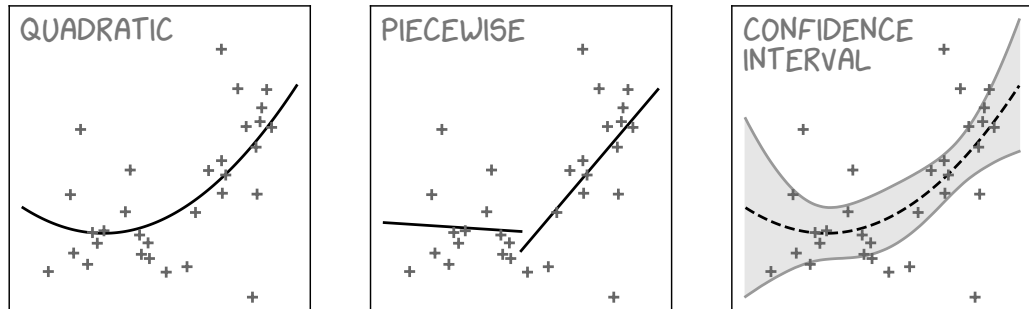**5   Data Science (djw1005)**

These three plots are adapted from xkcd comic 2048 "Curve-fitting methods and the messages they send" by Randall Munroe (CC BY-NC 2.5)[†].

(a) Describe a probability model and a fitting procedure that might be behind the "Quadratic" plot. Give pseudocode for the fitting procedure. Explain briefly how the plot is produced. [*Note:* When describing your model, remember to state any relevant probability distributions.] [7 marks]

(b) Repeat part (a) for the "Piecewise" plot. [5 marks]

(c) Repeat part (a) for the "Confidence interval" plot. In your answer, explain carefully the basis for your confidence interval calculation. [8 marks]

[†] https://creativecommons.org/licenses/by-nc/2.5/legalcode