

LESSON 5.3 Assignment

Name _____ Date _____

Connecting Pieces
Piecewise Functions

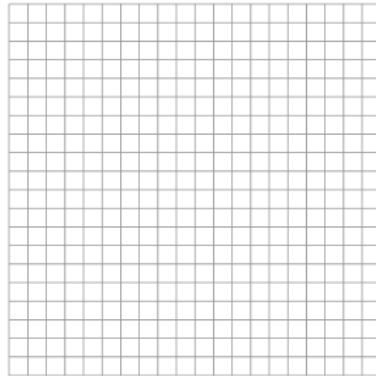
1. The West Nile virus is a disease that is most commonly spread by mosquitoes. The table displays the number of reported cases of West Nile virus in a particular California county. Week 1 corresponds to the first full week of June.

Time (weeks)	Number of Cases of West Nile Virus
1	2
2	10
3	17
4	20
5	18
6	17
7	24
8	30
9	38
10	32
11	29
12	31
13	30
14	34
15	40
16	36
17	32
18	27
19	23
20	19

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- a. Create a scatter plot of the data on the given coordinate plane.

- b. Consider using a piecewise function to model the data. Determine the intervals for the domain, and the type of polynomial function for each interval. Explain your reasoning.

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- c. Write a piecewise function to model the data. Round decimals to the nearest thousandth. Then, graph the piecewise function on the given coordinate plane.

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- d. Is the model you chose a good fit for the data? Explain your reasoning.
- e. Predict the number of cases that will be reported during the 2nd full week of November (Week 24). Does your prediction seem reasonable? Explain your reasoning.
- f. Determine a single regression equation to model the data. Is this model a good fit for the data? Explain your reasoning.

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