

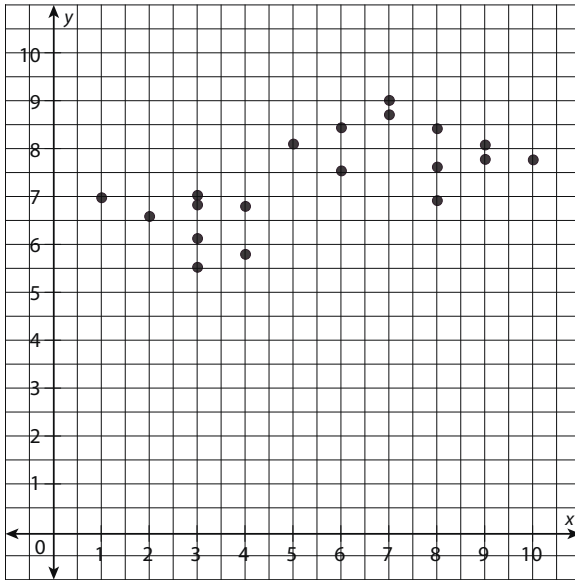
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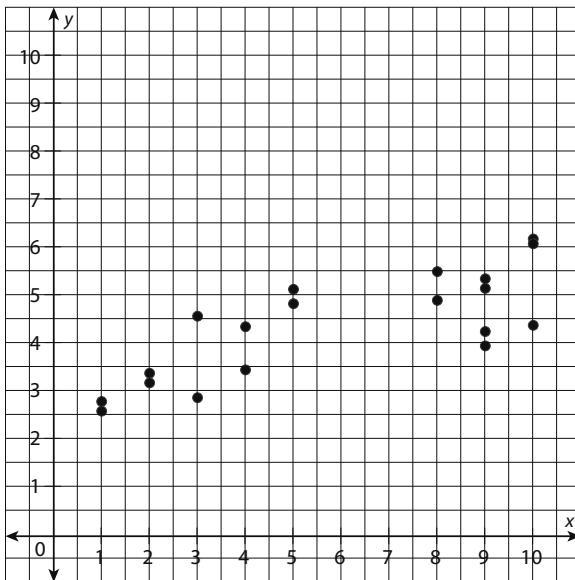
Scaffolded Practice: Sinusoidal Regression

In problems 1–3, identify whether the data in the scatter plot suggests a sinusoidal relationship. Explain your reasoning.

1.



2.

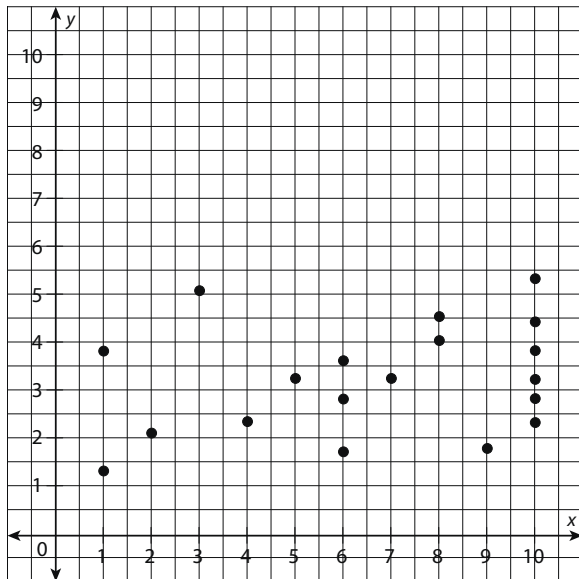


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3.



In problems 4–6, use a calculator or other technology to find a sinusoidal regression that models each data set.

4.

x	1	2	3	4	5	6	7	8	9	10
y	4.52	6.16	6.68	6.56	6.18	4.99	4.97	6.71	6.74	6.09

5.

x	1	1	2	3	4	5	6	7	8	9
y	2.84	2.6	3.44	3.6	3.88	3.59	2.42	2.21	1.94	2.45

6.

x	1	1	2	2	3	3	6	7	8	9
y	3.6	3.12	3.04	3.66	3.43	3.85	4.58	4.17	4.28	4.44

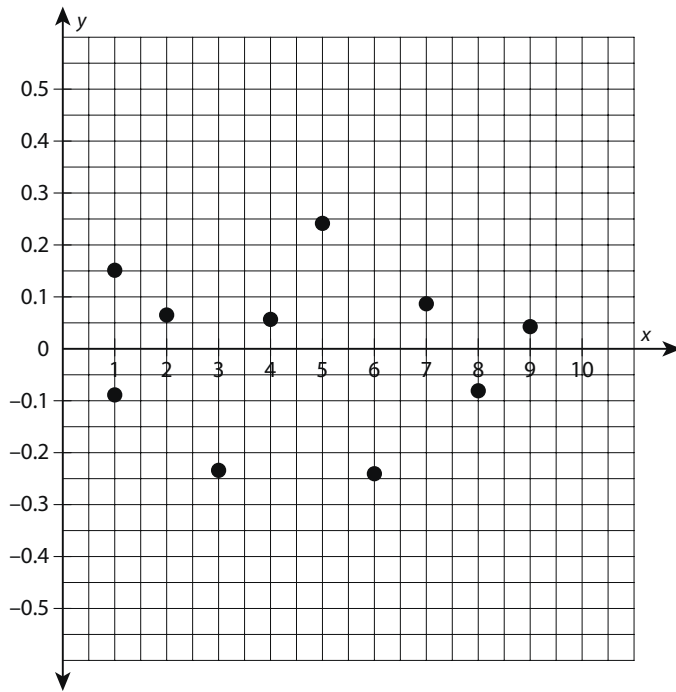
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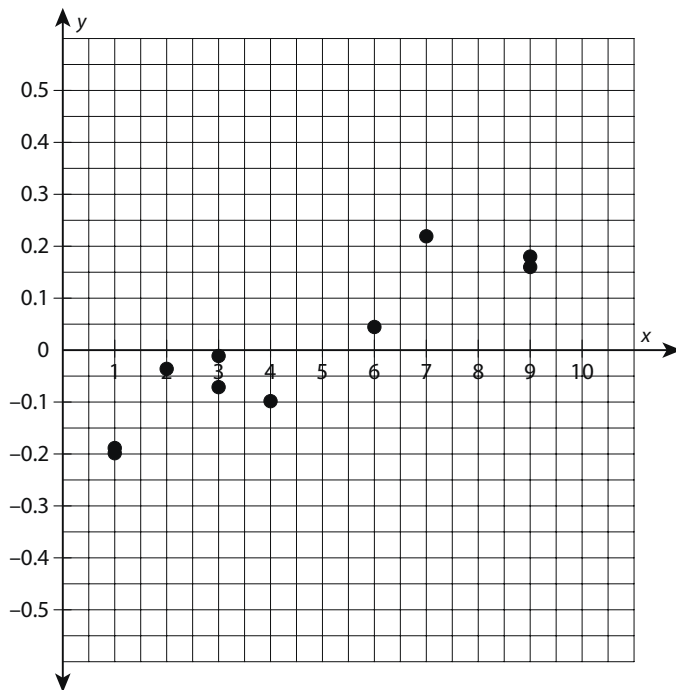
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In problems 7 and 8, the residual plots for sinusoidal regressions are given. Determine whether a sinusoidal regression is appropriate for the data set. Explain your reasoning.

7.



8.



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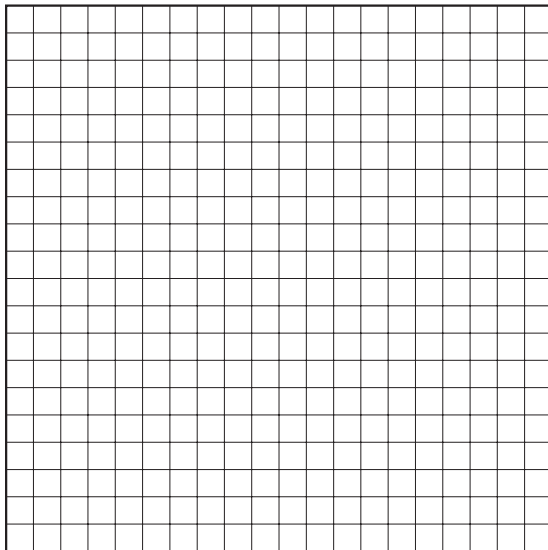
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Use the table to complete problems 9 and 10.

x	1	3	4	5	5	7	7	7	7	8
y	8.36	9.98	9.22	7.66	7.94	9.66	9.7	9.96	9.78	9.65

9. Create a scatter plot of the data. Then graph the function $y = 1.05 \sin(1.34x - 2.21) + 8.97$ on the same plot. Does the function appear to be a good fit? Explain.



10. Create a residual plot for the function $y = 1.05 \sin(1.34x - 2.21) + 8.97$. Is the function a good fit? Explain.

