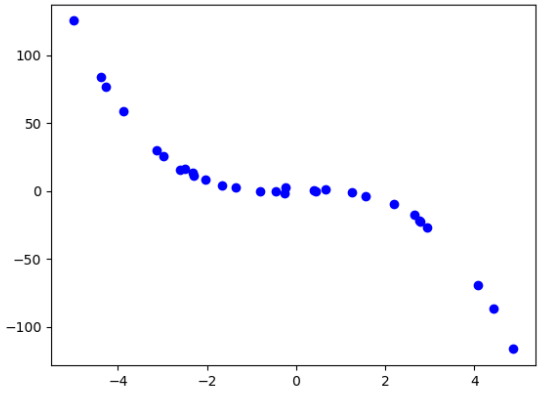
1. Determine the appropriate model for the graph of points below.




A. Linear model

B. Logarithmic model

C. Non-linear Power model

D. Exponential model

E. None of the above

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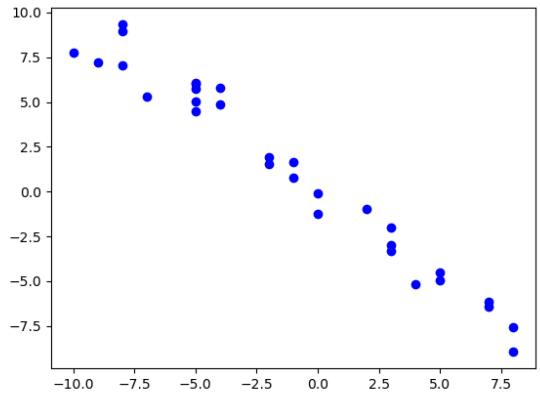
2. Determine the appropriate model for the graph of points below.




A. Logarithmic model

B. Linear model

C. Non-linear Power model

D. Exponential model

E. None of the above

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3.

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4. Solve the modeling problem below, if possible.

*A new virus is spreading throughout the world. There were initially 3 many cases reported, but the number of confirmed cases has quadrupled every 4 days. How long will it be until there are at least 1000 confirmed cases?*

A. About 14 days

B. About 24 days

C. About 12 days

D. About 17 days

E. There is not enough information to solve the problem.

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5.

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6. Solve the modeling problem below, if possible.

*In CHM2045L, Brittany created a 27 liter 26 percent solution of chemical $\chi$ using two different solution percentages of chemical $\chi$. When she went to write her lab report, she realized she forgot to write the amount of each solution she used! If she remembers she used 15 percent and 29 percent solutions, what was the amount she used of the 15 percent solution?*

A. 21.21

B. 11.56

C. 5.79

D. 13.50

E. There is not enough information to solve the problem.

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7. For the scenario below, use the model for the volume of a cylinder as $V = \pi r^2 h$.

*Pringles wants to add 26 percent more chips to their cylinder cans and minimize the design change of their cans. They've decided that the best way to minimize the design change is to increase the radius and height by the same percentage. What should this increase be?*

A. About 8 percent

B. About 13 percent

C. About 3 percent

D. About 12 percent

E. None of the above

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8. Solve the modeling problem below, if possible.

*A new virus is spreading throughout the world. There were initially 5 many cases reported, but the number of confirmed cases has doubled every 3 days. How long will it be until there are at least 100000 confirmed cases?*

A. About 30 days

B. About 15 days

C. About 43 days

D. About 14 days

E. There is not enough information to solve the problem.

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9. Solve the modeling problem below, if possible.

*In CHM2045L, Brittany created a 27 liter 21 percent solution of chemical $\chi$ using two different solution percentages of chemical $\chi$. When she went to write her lab report, she realized she forgot to write the amount of each solution she used! If she remembers she used 15 percent and 35 percent solutions, what was the amount she used of the 35 percent solution?*

A. 8.10

B. 18.90

C. 13.50

D. 9.37

E. There is not enough information to solve the problem.

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10. For the scenario below, use the model for the volume of a cylinder as $V = \pi r^2 h$.

*Pringles wants to add 42 percent more chips to their cylinder cans and minimize the design change of their cans. They've decided that the best way to minimize the design change is to increase the radius and height by the same percentage. What should this increase be?*

A. About 19 percent

B. About 3 percent

C. About 12 percent

D. About 21 percent

E. None of the above

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