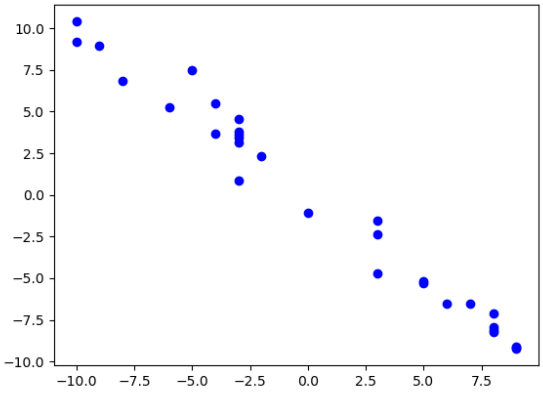
1. Determine the appropriate model for the graph of points below.



A. Linear model

B. Exponential model

C. Non-linear Power model

D. Logarithmic model

E. None of the above

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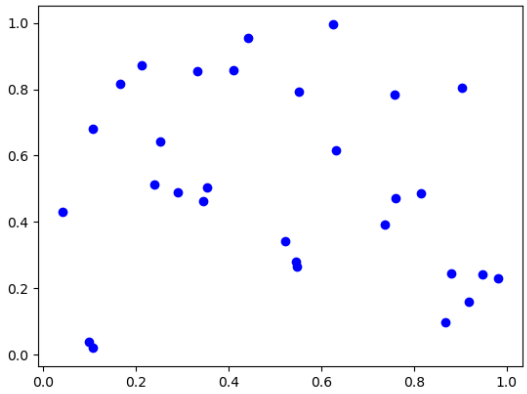
2. Determine the appropriate model for the graph of points below.



A. Linear model

B. Exponential model

C. Logarithmic model

D. Non-linear Power model

E. None of the above

3.

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4. Solve the modeling problem below, if possible.

A new virus is spreading throughout the world. There were initially 7 many cases reported, but the number of confirmed cases has doubled every 2 days. How long will it be until there are at least 1000000 confirmed cases?

A. About 11 days

B. About 10 days

C. About 35 days

D. About 24 days

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

5.

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6. Solve the modeling problem below, if possible.

In CHM2045L, Brittany created a 16 liter 20 percent solution of chemical χ using two different solution percentages of chemical χ. 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 32 percent solutions, what was the amount she used of the 15 percent solution?

A. 10.13

B. 4.71

C. 11.29

D. 8.00

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 46 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 21 percent

B. About 4 percent

C. About 13 percent

D. About 23 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 8 many cases reported, but the number of confirmed cases has quadrupled every 5 days. How long will it be until there are at least 1000000 confirmed cases?

A. About 23 days

B. About 59 days

C. About 20 days

D. About 43 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 16 percent solution of chemical χ using two different solution percentages of chemical χ. 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 14 percent and 43 percent solutions, what was the amount she used of the 43 percent solution?

A. 25.14

B. 13.50

C. 7.82

D. 1.86

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 46 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 21 percent

B. About 15 percent

C. About 23 percent

D. About 13 percent

E. None of the above
