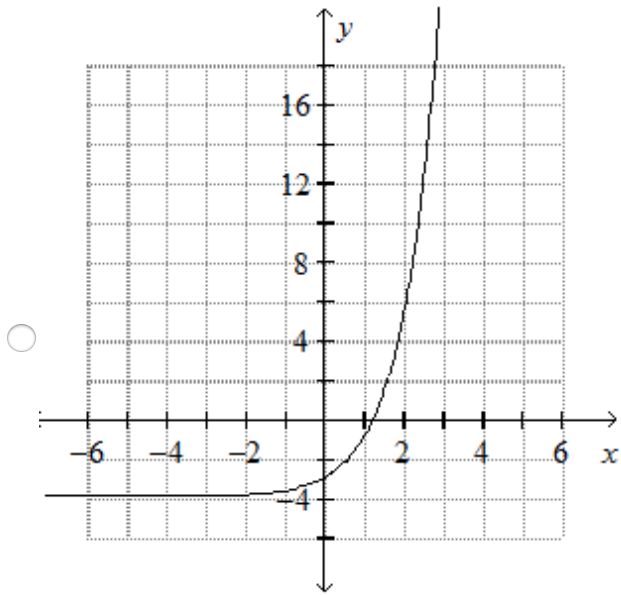


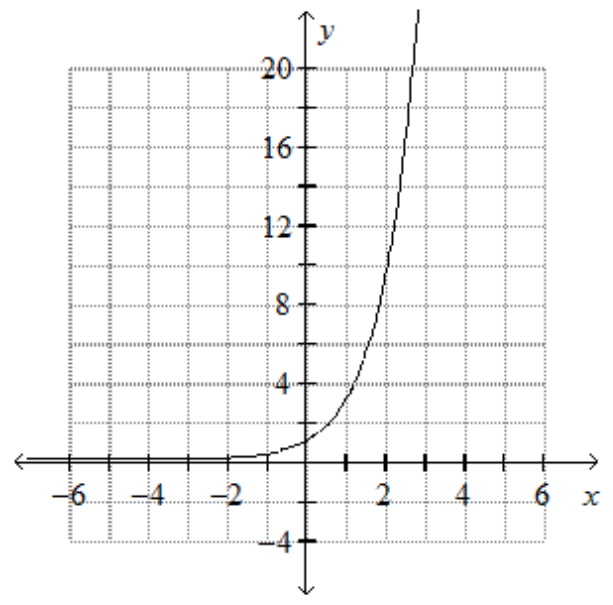
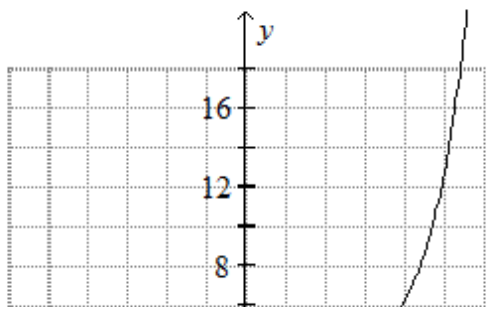
Multiple Choice

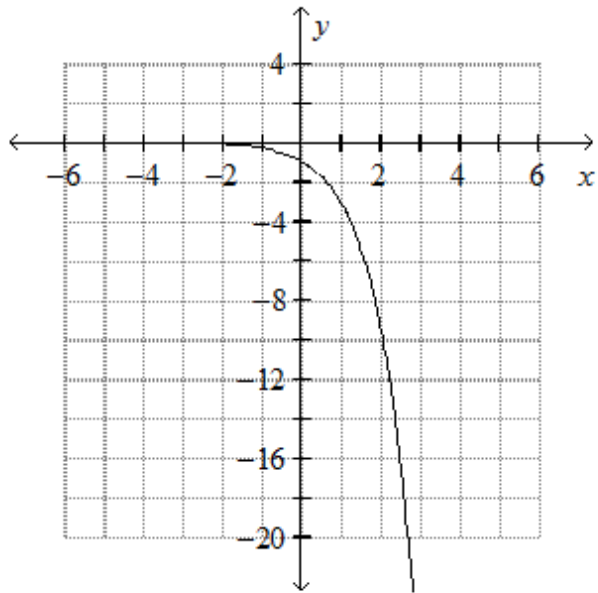
For questions 1 and 2, graph the exponential function.

1. $y = 3^x$ (1 point)

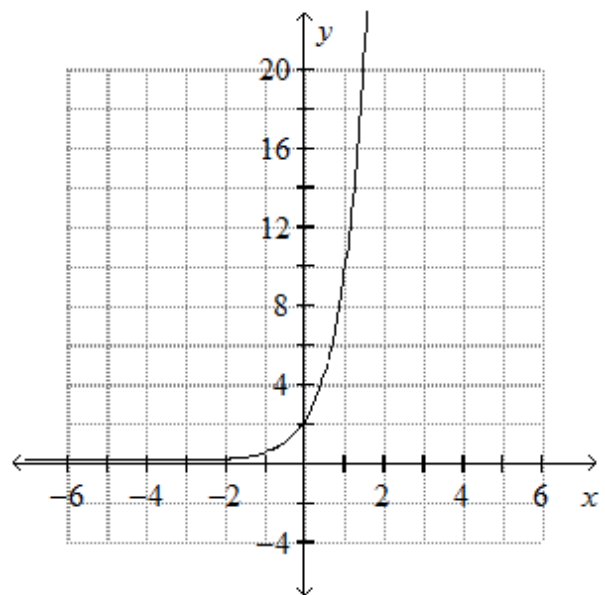


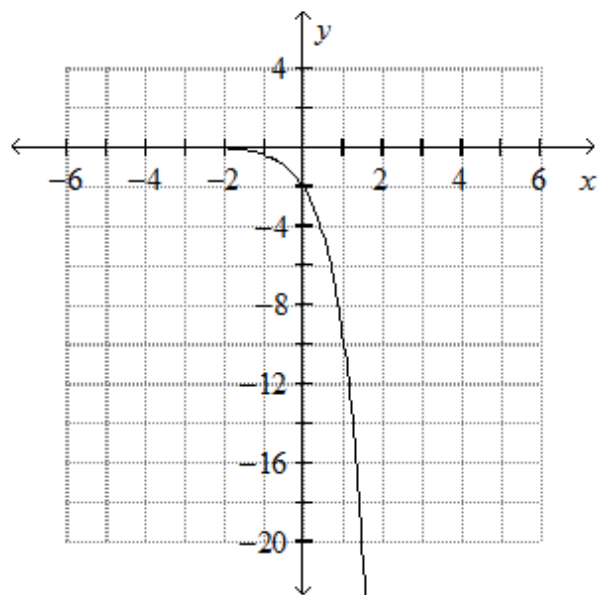
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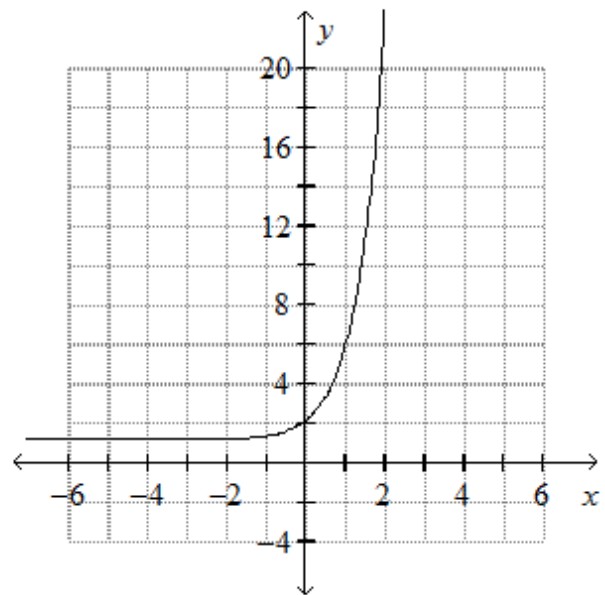


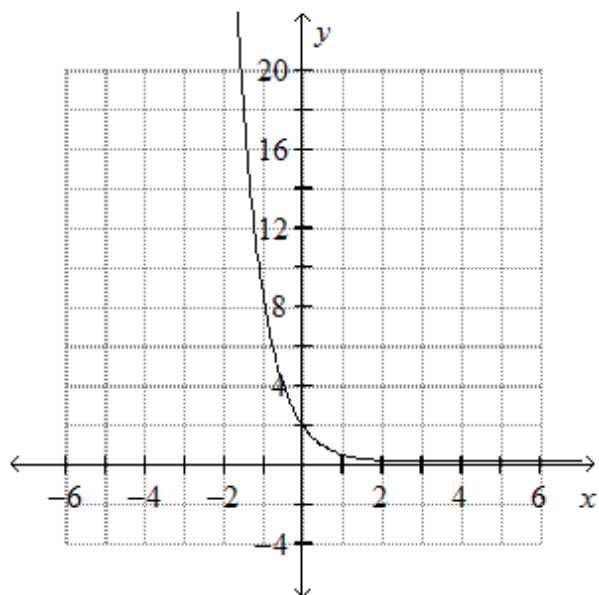


2. $y = 2(4.5)^x$



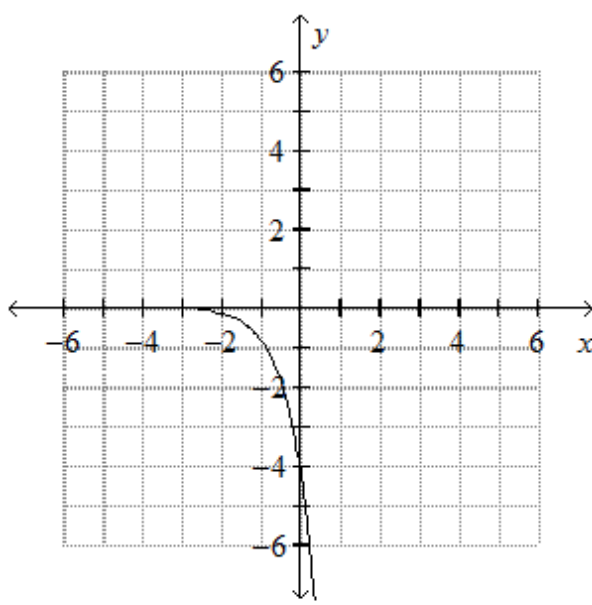
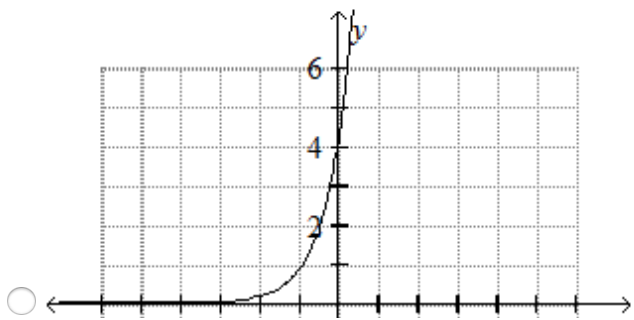


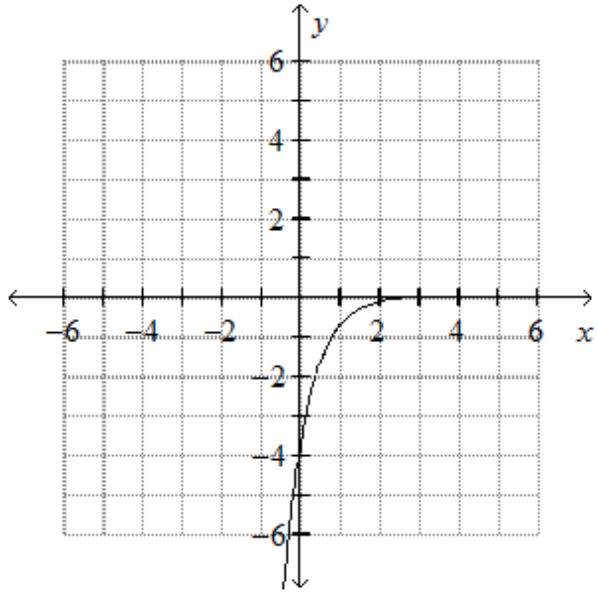




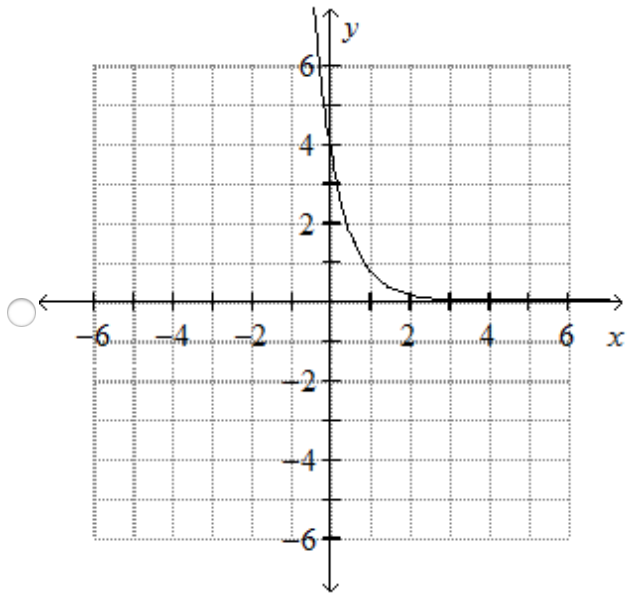
For questions 3 and 4, graph the function.

3. $y = 4\left(\frac{1}{5}\right)^x$

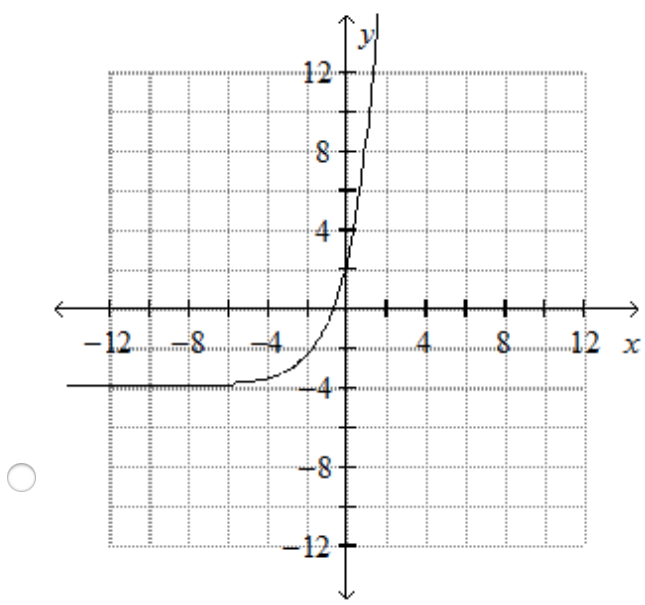
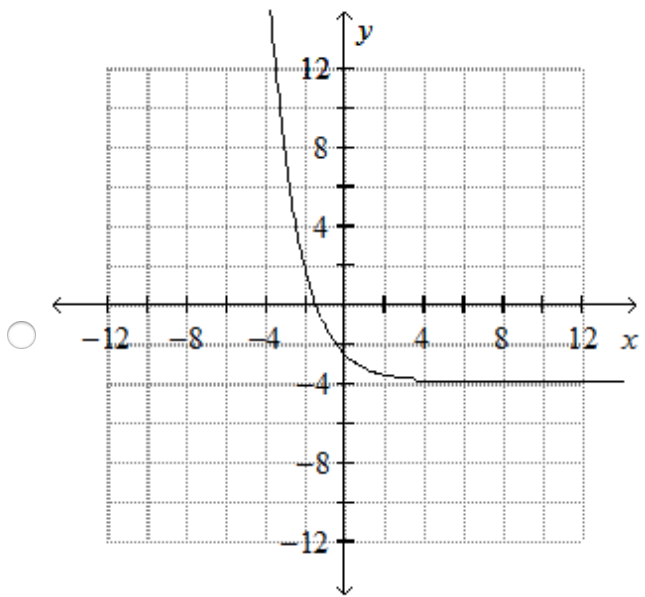


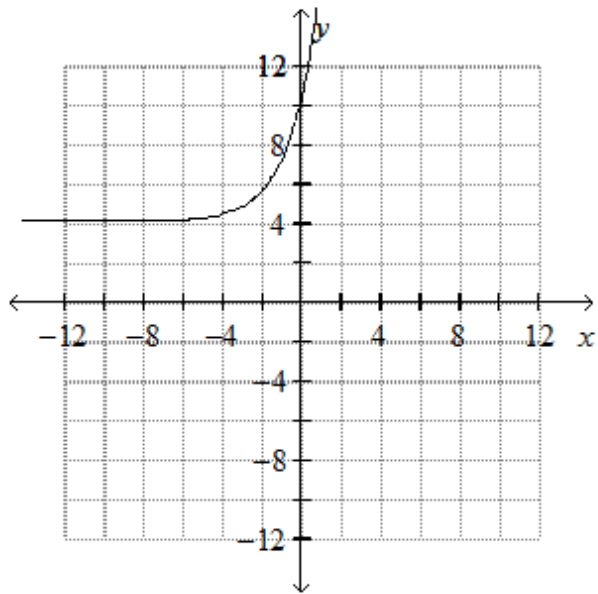


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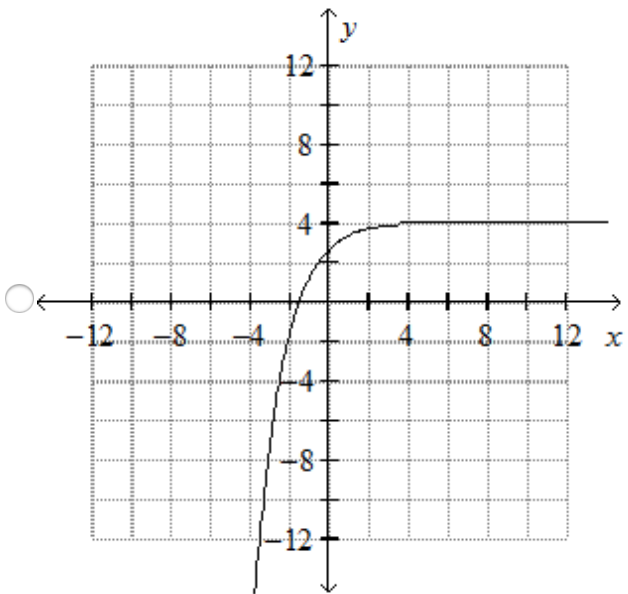


4. $y = 3(2)^{x+1} - 4$ (1 point)





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5. The half-life of a certain radioactive material is 78 hours. An initial amount of the material has a mass of 790 kg. Write an exponential function that models the decay of this material. Find how much radioactive material remains after 18 hours. Round your answer to the nearest thousandth.

$y = \frac{1}{2} \left(\frac{1}{790} \right)^{\frac{1}{78}x}$; 0.107kg

$y = 790 \left(\frac{1}{2} \right)^{78x}$; 0 kg

$y = 2 \left(\frac{1}{790} \right)^{\frac{1}{78}x}$; 0.429 kg

$y = 790 \left(\frac{1}{2} \right)^{\frac{1}{78}x}$; 673.233 kg

6. Use a graphing calculator to evaluate $e^{1.6}$ to four decimal places.

- 4.9530
 0.2019
 2.7183
 4.3493

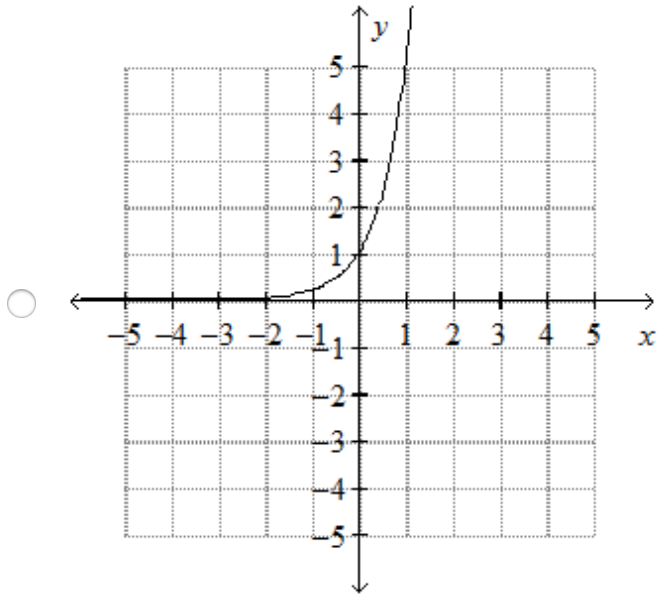
7. The table shows the location and magnitude of some notable earthquakes. How many times more energy was released by the earthquake in Mexico than by the earthquake in Afghanistan?

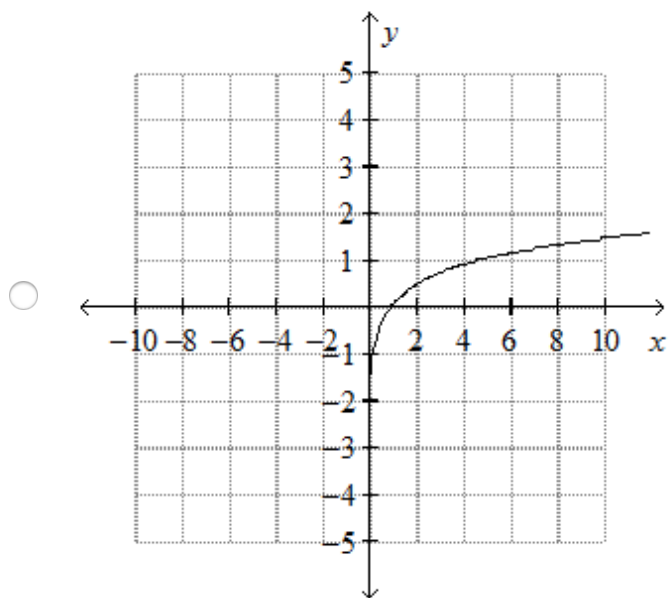
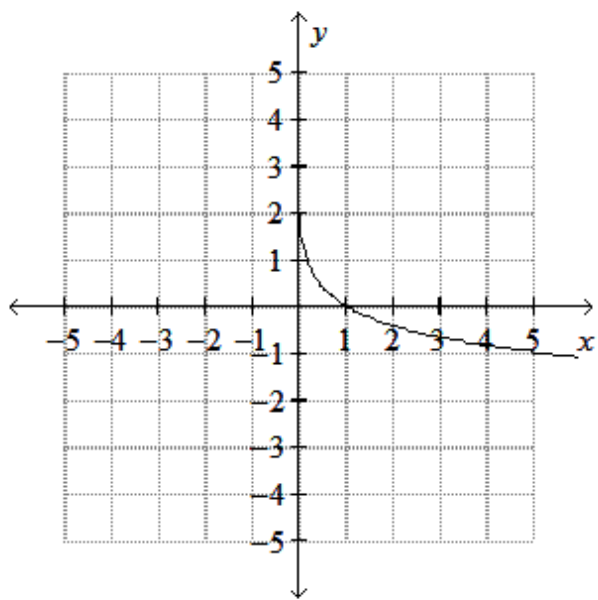
Earthquake Location	Date	Richter Scale Measure
Italy	October 31, 2002	5.9
El Salvador	February 13, 2001	6.6
Afghanistan	May 30, 1998	6.9
Mexico	January 22, 2003	7.6
Peru	June 23, 2001	8.1

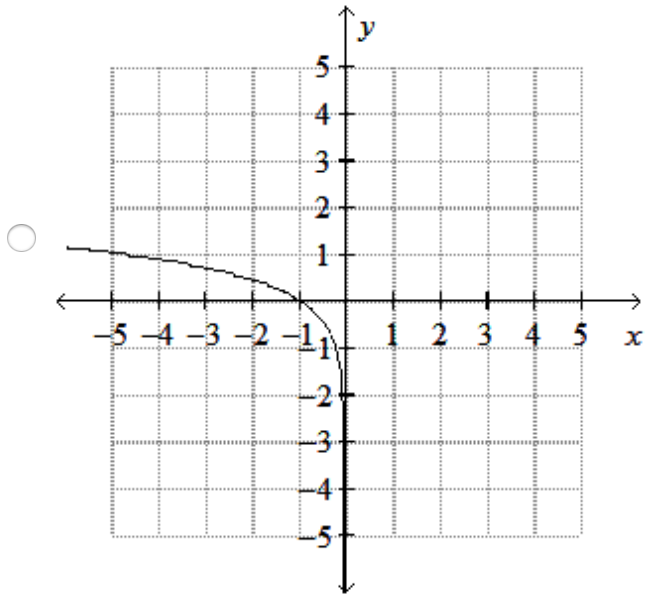
- about 42.36 times as much energy
- about 0.70 times as much energy
- about 5.01 times as much energy
- about 21 times as much energy

8. Graph the logarithmic equation.

$$y = \log_5 x$$

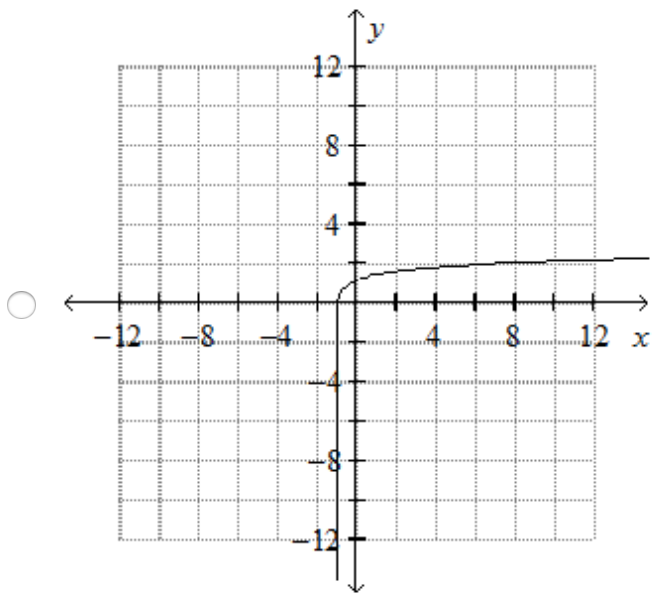






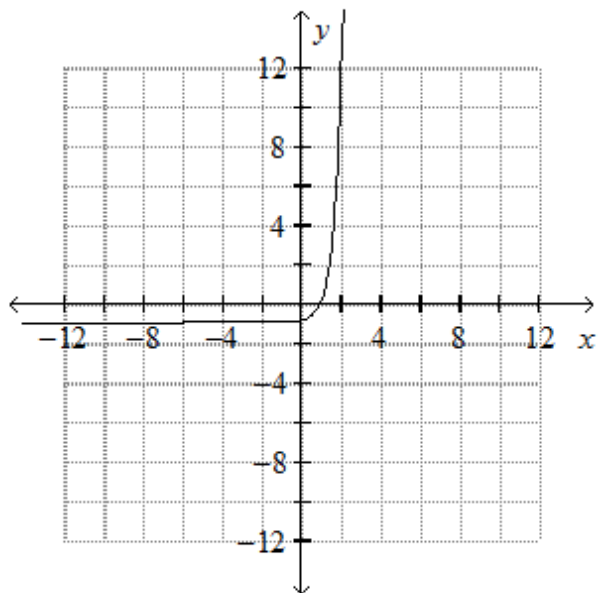
9. Graph the function.

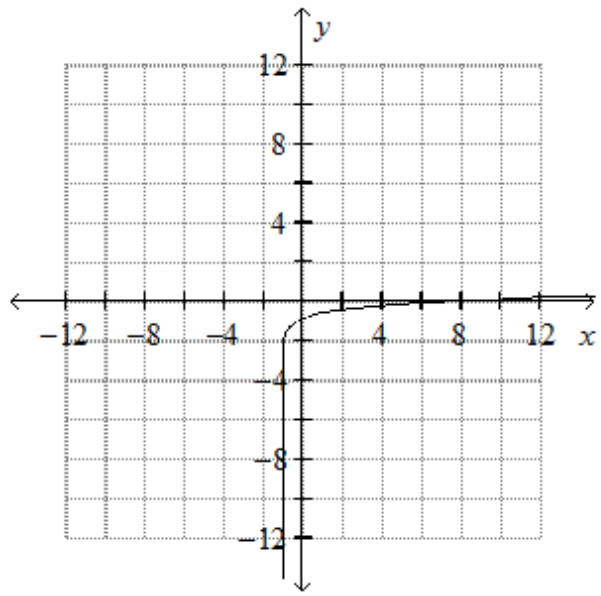
$$y = \log(x + 1) + 1$$

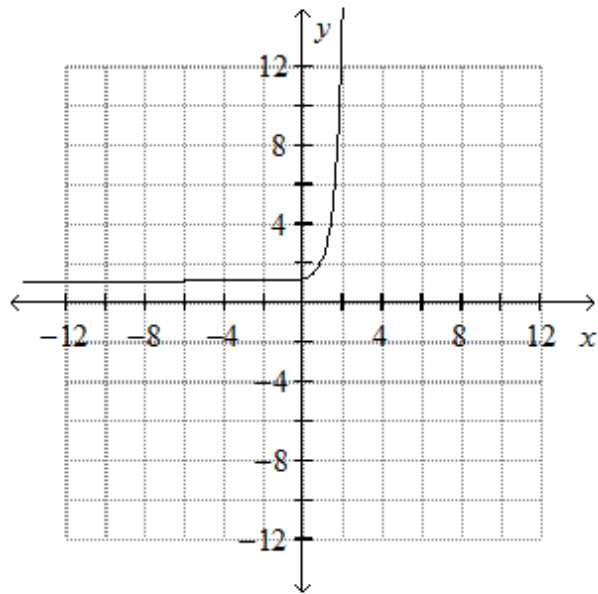


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10.

Note: For questions 10 through 13, remember to show all of the steps that you use to solve the problem. You can use the comments field to explain your work. Your teacher will review each step of your response to ensure you receive proper credit for your answer.

An initial population of 745 quail increases at an annual rate of 16%. Write an exponential function to model the quail population. What will the approximate population be after 4 years?

11. How much money invested at 5% compounded continuously for 3 years will result in \$820?

12. Graph $y = 5^x$ and $y = \log_5 x$ on a sheet of paper using the same set of axes. Use the graph to describe the domain and range of each function. Then identify the y -intercept of each function and any asymptotes of each function.

13. Evaluate the logarithm. \

$$\log_6 \frac{1}{36}$$

