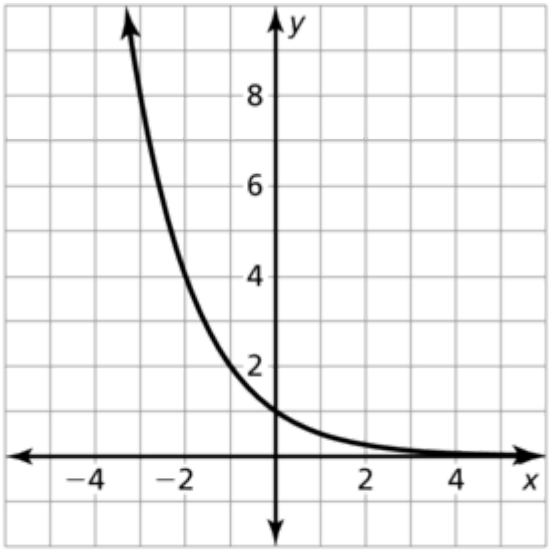
ANSWER PRESENTATION TOOL

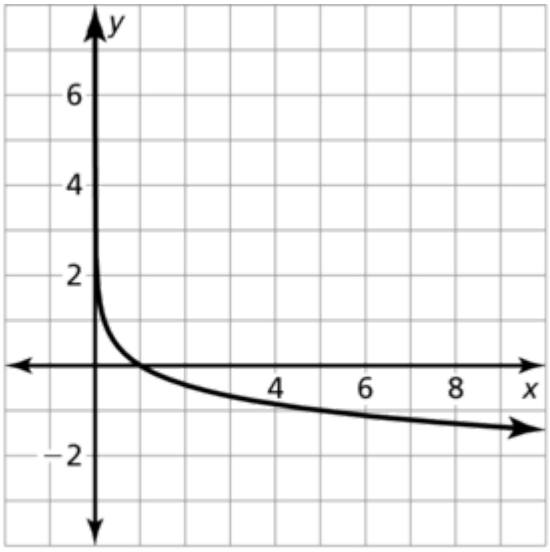
Algebra 2 - Student Editic 6 Chapter Test 1-15 ALL EVEN ODD Show Solu

1.



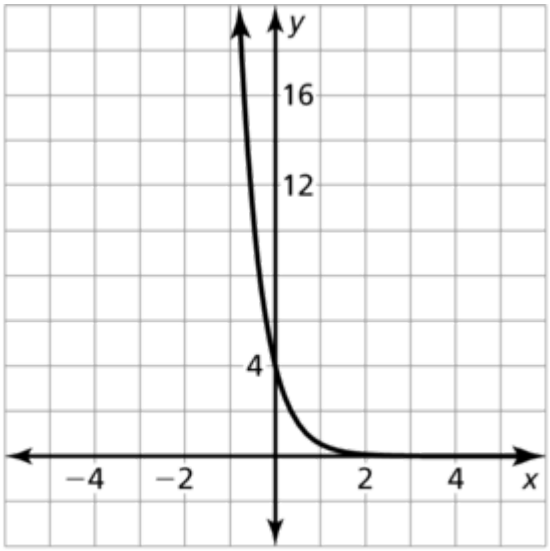
domain: all real numbers, range: $y > 0$, asymptote: $y = 0$

2.



domain: $x > 0$, range: all real numbers, asymptote: $x = 0$

3.



domain: all real numbers, range: $y > 0$, asymptote: $y = 0$

4. The graph of g is a reflection in the x-axis followed by a translation 4 units right of the graph of f; $g(x) = -\log(x - 4)$

5. The graph of g is a reflection in the y-axis followed by a translation 2 units up of the graph of f; $g(x) = e^{-x} + 2$

6. The graph of g is a vertical stretch by a factor of 2 of the graph of f; $g(x) = 2\left(\frac{1}{4}\right)^x$

7. 3.597

8. 0.335

9. 2.524

10. 1.262

11. Both equations transform into a linear equation that is solved to find the value of x. To get the linear equation, the first equation requires that exponent rules are used to make the bases the same. In the second equation, the definition of logarithm is used to write the equation in exponential form to get the linear equation; $x = 0.8$; $x = -0.2$

12. The expressions are all equivalent; change-of-base formula

13. 39.329 billion barrels; $y = 40.473(1.085)^x$; The inverse function gives the number of wells, y, that need to be drilled to obtain x billions of barrels.

14. **a.** $L(x) = 100e^{-0.02x}$

b. exponential decay; Natural base functions of the form $y = ae^{rx}$ show decay when r is negative.

c. about 44.9%

15. *Sample answer:* To find an exponential equation in the form $y = ab^x$, the common ratio, b, can be found by dividing consecutive terms and a is the y-value when x is 0. Two points can be used to create a system of equations in the form $y = ab^x$ which can be solved for a and b. Or, use the *regression* feature of a graphing calculator to find an exponential model which fits the data; $4200(0.90)^x$; in the 4th year