Algebra II Semester 2 Final Review Packet

Name _____

Period/Date _____

Find an equation for the inverse relation.

$y = 2x + 1$

$y = x^2 + 2$

$y = \frac{1}{2} - \frac{2}{3}x$

$f(x) = 3 - x$

Rewrite the equation in exponential form.

$\log_7 49 = 2$

$\log_{16} 4 = \frac{1}{2}$

$\log_5 125 = 3$

$\log_3 \frac{1}{9} = -2$

Evaluate the logarithm without using a calculator.

$\log_9 81$

$\log_3 \frac{1}{3}$

$\log_{27} 3$

Expand the expression.

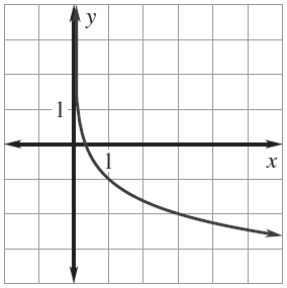
$\log_3 3x$

$\log \frac{2x}{5}$

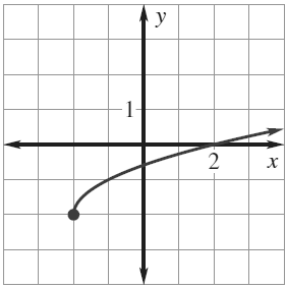
$\log_7 x^2 y$

Match the following graphs to their respective equations on the next page.

A.



B.



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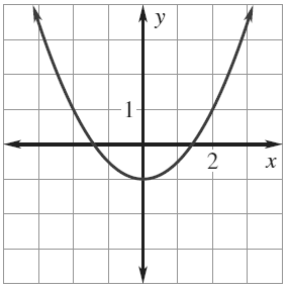

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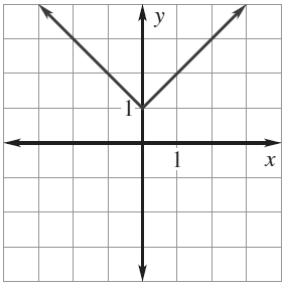

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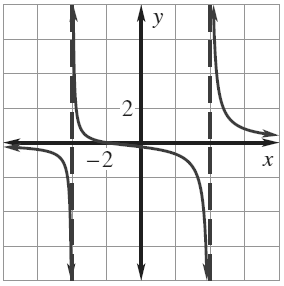

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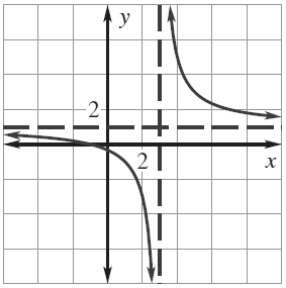
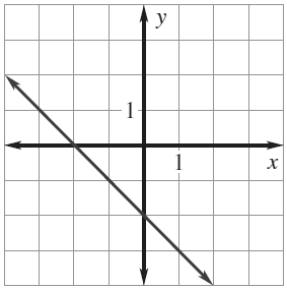
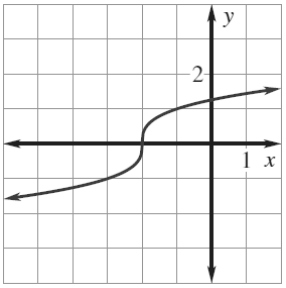


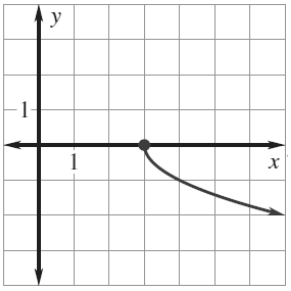
G.



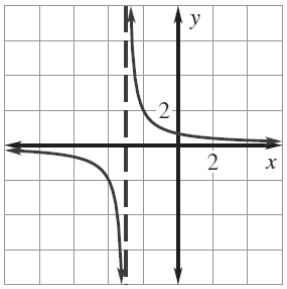
H.



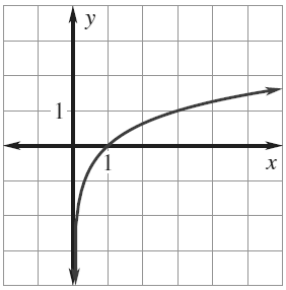
I.



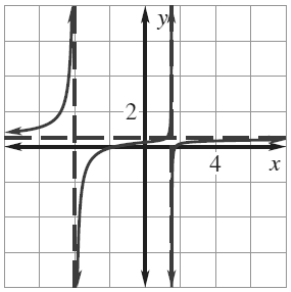
J.



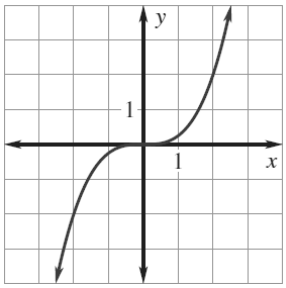
K.



L.



M.



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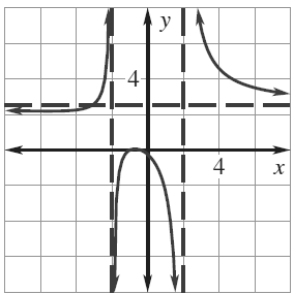
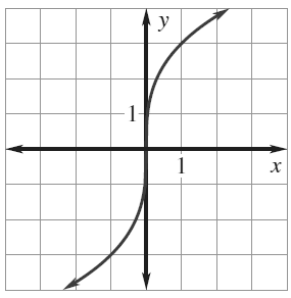


O.



Fill in the letter of the graphs from the previous page to the matching equations.

_____ $f(x) = \frac{x+1}{x-3}$

_____ $f(x) = \log_3 x$

_____ $f(x) = -\log_3 x - 1$

_____ $f(x) = |x| + 1$

_____ $f(x) = -x - 2$

_____ $f(x) = \frac{1}{4}x^3$

_____ $f(x) = \sqrt[3]{x+2}$

_____ $f(x) = \sqrt{x+2} - 2$

_____ $f(x) = \frac{1}{2}x^2 - 1$

_____ $f(x) = \frac{2x+4}{x^2-16}$

_____ $f(x) = \frac{5x^2+7x+2}{2x^2-8}$

_____ $f(x) = 3\sqrt[3]{x}$

_____ $f(x) = -\sqrt{x-3}$

_____ $f(x) = \frac{2}{x+3}$

_____ $f(x) = \frac{x^2-3}{2x^2+5x-12}$

Condense the expression.

$\log 4 + 3 \log x + \log y$

$3 \log x + \log 4 - \log x - \log 6$

$2 \ln x - \ln 3 + \ln 6$

Find the vertical and horizontal asymptotes of the graph of the function. Identify the *x*-intercept(s)

$f(x) = \dfrac{4}{x - 2} + 1$

$f(x) = \dfrac{x + 1}{2x - 3}$

$y = \dfrac{x^2 + 2x - 15}{x^2 - 36}$

$y = \dfrac{2x - 1}{x^2 + 7}$