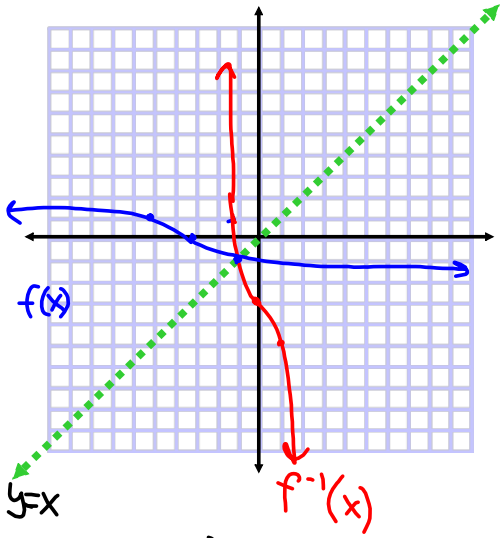
Inverse Functions WKS

(23) $f(x) = \sqrt[3]{\frac{-x-3}{2}}$



Inverse:

$x^3 = \left(\sqrt[3]{\frac{-y-3}{2}}\right)^3$

$2 \cdot x^3 = \frac{-y-3}{2} \cdot 2$

$2x^3 = -y-3$

$+y \quad +y \quad -2x^3 \quad -2x^3$

$y = -2x^3 - 3$

$f^{-1}(x) = -2x^3 - 3$

(3) $g(x) = \frac{3}{x-2}$

$(y-2)x = \frac{3}{(y-2)} \cdot (y-2)$

$(y-2)x = 3$

$\frac{(y-2)x}{x} = \frac{3}{x}$

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

$+2 \quad +2$

$y = \frac{3}{x} + 2$

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

$I = Pe^{rt}$

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

$e \approx 2.7$

$\ln x = \log_e x$

Inverses e^x

(15) $y = 2\ln x$

$\frac{x}{2} = \frac{2\ln y}{2}$

$\frac{x}{2} = \ln y$

$e^{x/2} = e^{\ln y}$

$e^{x/2} = y$

$\frac{x}{2} = \log_e y$

$e^{x/2} = y$

Get out a piece of paper and write down everything you remember about logarithms.

Logarithms

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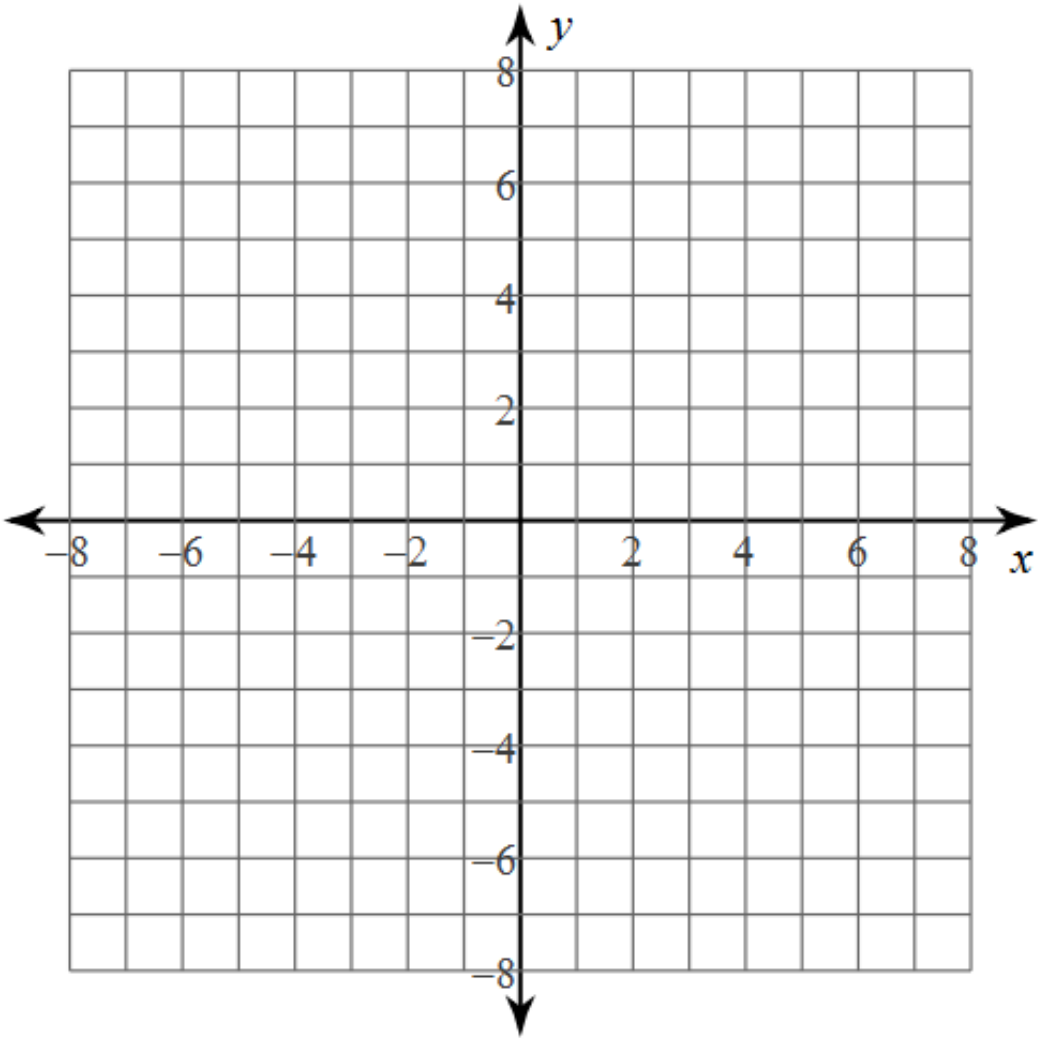
Graphing

$$y = \log_4 (x - 1) - 2$$



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Condensing

Condense each expression to a single logarithm.

$$\log_8 a + \log_8 b + 4\log_8 c$$

$$\frac{\log_4 x}{3} + \frac{\log_4 y}{3} + \frac{\log_4 z}{3}$$

$$16\log_3 8 - 4\log_3 11$$

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Expanding

Expand each logarithm.

$$\log_4 \frac{3^5}{10^2}$$

$$\log_7 (xy^2)^4$$

$$\log_9 \left(w^6 \sqrt[3]{u}\right)$$

$$\log \left(\frac{x^5}{y}\right)^2$$

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Rewriting

$$\log_{\frac{1}{8}} \frac{1}{64} = 2$$

$$\log_{9} 81 = 2$$

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Solving Equations

Solve each equation.

$$\ln(6 - m) = \ln(m + 10)$$

$$\log_6 2x^2 - \log_6 8 = 4$$

Homework

Finish Logarithms Review WKS

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