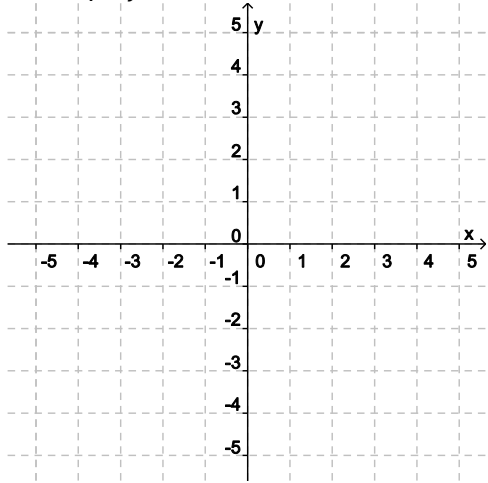
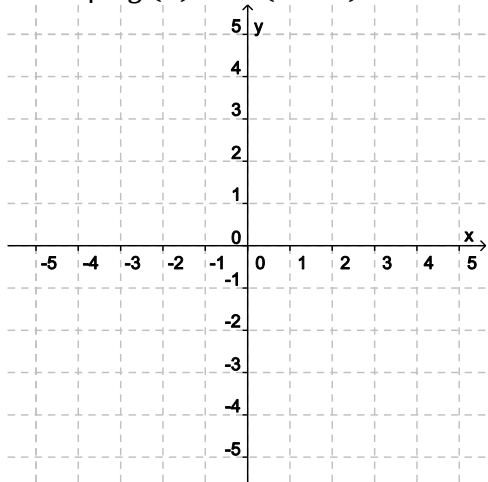


1. Graph $f(x) = -3^{-x} - 2$. State the domain, range, and asymptote.



2. Graph $g(x) = \ln(x + 2) - 3$. State the domain, range, and asymptote.



3. Evaluate without a calculator.

a) $\log_5 \sqrt{5}$

b) $\ln e^7$

4. Make sure you know how to use your calculator to evaluate using exponents and logarithms. Evaluate each of the following with a calculator and round to the nearest 3 decimal places.

a) $2^{3.1}$

b) e^5

c) $\log 47$

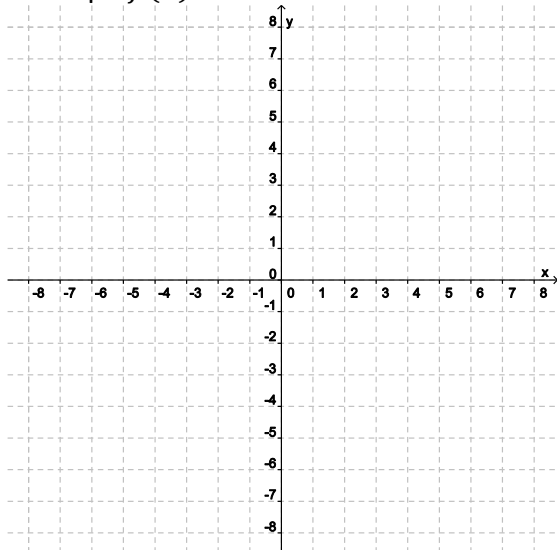
d) $\ln 15$

5. Find the domain of $f(x) = \sqrt{x-3} - \log_4(5-x)$.

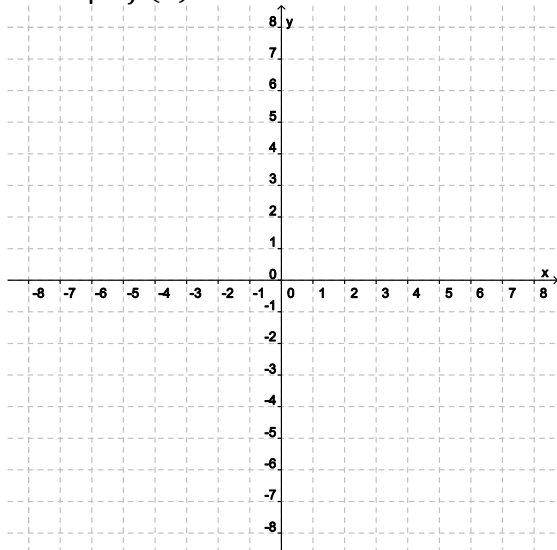
Challenge: Find $\log(\log(\log(10^{100^{500}})))$.

Q: What belongs to you but others use it more than you do?

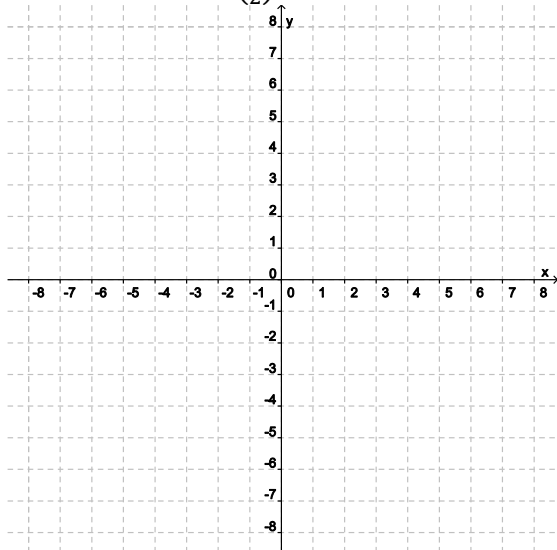
6. Graph $f(x) = 2^{-x+1} - 3$. State the domain, range, and asymptote.



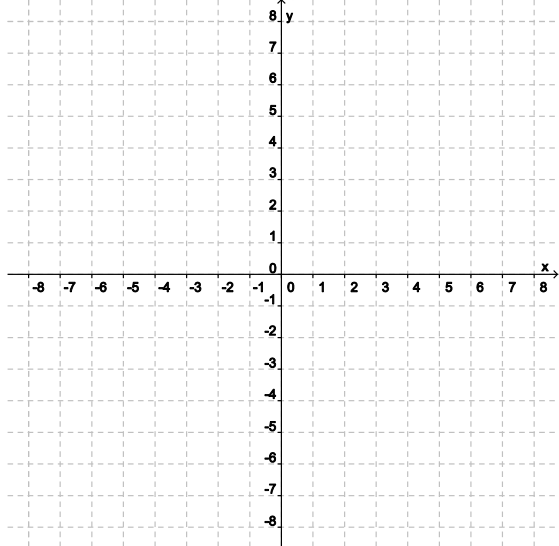
7. Graph $f(x) = 4 - 3^{2x+1}$. State the domain, range, and asymptote.



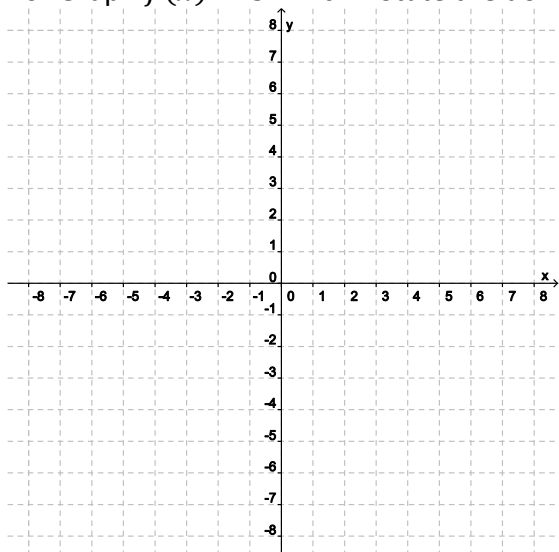
8. Graph $f(x) = \left(\frac{1}{2}\right)^{x-2} + 1$. State the domain, range, and asymptote.



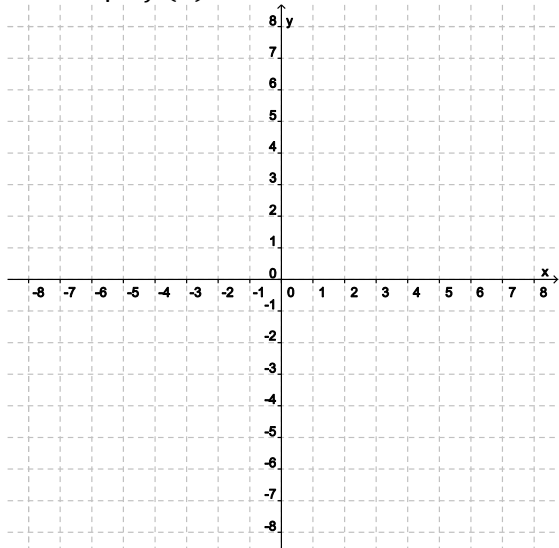
9. Graph $f(x) = -\left(\frac{1}{3}\right)^x - 2$. State the domain, range, and asymptote.



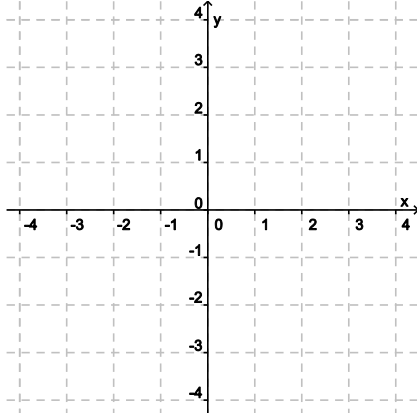
10. Graph $f(x) = 3 - 2e^x$. State the domain, range, and asymptote.



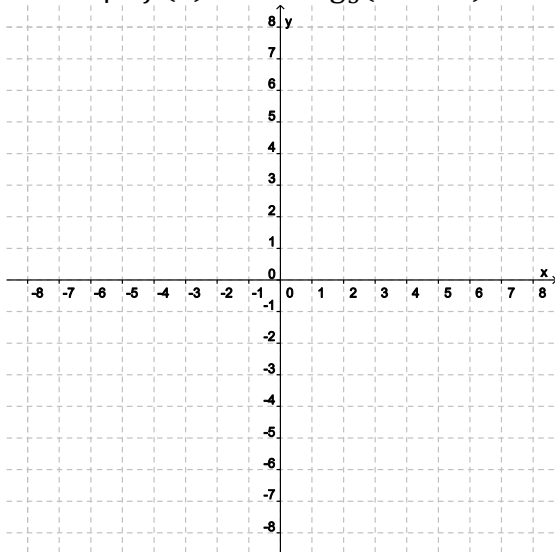
11. Graph $f(x) = e^{-\frac{x}{2}} + 1$. State the domain, range, and asymptote.



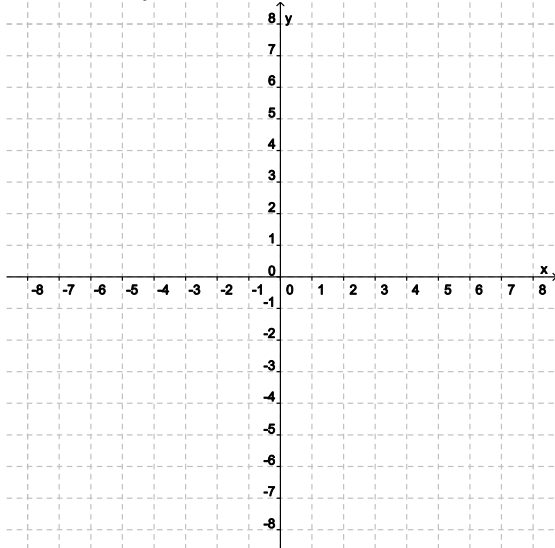
12. Graph $f(x) = -\log_2(3x) + 1$. State the domain, range, and asymptote.



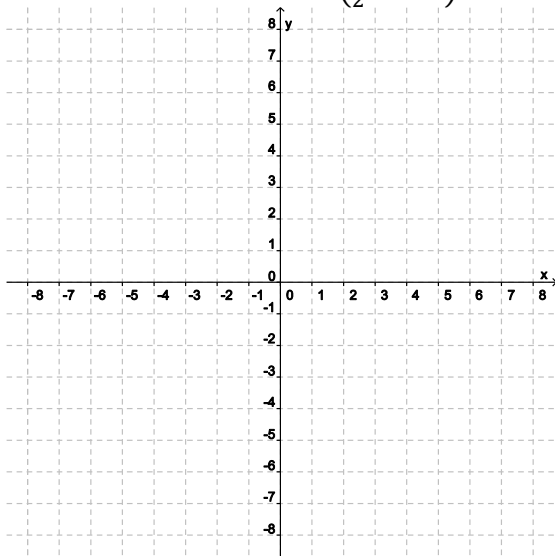
13. Graph $f(x) = 2 + \log_3(-x - 1)$. State the domain, range, and asymptote.



14. Graph $f(x) = 2 \ln(x + 1) - 3$. State the domain, range, and asymptote.



15. Graph $f(x) = 4 - \ln\left(\frac{1}{2}x + 1\right)$. State the domain, range, and asymptote.



16. Evaluate without a calculator.

a) $\log_3 \frac{1}{\sqrt{3}}$

b) $\ln(e^2 e^5)$

c) $2^{\log_2 42}$

d) $\log(\log(\text{googol}))$ (that is, $\log(\log(10^{100}))$)

17. Find the domain of $f(x) = \frac{x-4}{\log_3(2x+1)}$.

18. Find the domain of $f(x) = \log\left(\frac{x}{x^2-x-2}\right)$.

19. Find the domain of $f(x) = \sqrt{2x+3} + \ln(x^2-x)$.

20. Find the domain of $f(x) = \frac{\ln(1-x)}{x\sqrt{x+2}}$.

Optional exercises from the Sullivan book if you'd like more practice:
5.3 (p.280) #15ad, 17ad, 21, 23, 35-61 odd
5.4 (p.294) #27-47 odd, 51-55 odd, 65-83 odd