

Warm up Week of 3.20

Monday

1. Convert to logarithmic form: $5^{-4} = \frac{1}{625}$
2. Evaluate the expression: $\log_{64} 512$
3. Solve for x : $9^{2x+1} = 27^{x+5}$
4. Solve for y : $4^y = 70$
5. Write an exponential function whose graph passes through the points: $(0, -2)$ and $(3, -54)$.

Tuesday

6. What is the equation of the line considered to be the asymptote for the exponential function: $f(x) = 5 \cdot \left(\frac{1}{2}\right)^{x+1} - 4$
7. Does the function in #6 represent exponential growth or decay?
8. Solve for x : $\log_9(3x + 14) - \log_9 5 = \log_9 2x$
9. Solve for c : $\log_4(c^2 - 4) - \log_4(c + 2) = \log_4 1$
10. Solve for m : $3 \log_5(m^2 + 9) - 6 = 0$

Wednesday

12. Identify the domain and range of the function: $f(x) = 5^x - 2$
13. Solve for x : $3e^{-2x} + 4 = 10$
14. Solve for f : $\ln 3f = 0.5$
15. What is the meaning of an extraneous solution?
16. Identify the transformation from $f(x) = 3^x$ to $f(x) = 3^{x+2} + 1$
17. Identify the transformation from $f(x) = \left(\frac{3}{4}\right)^x$ to $f(x) = \left(\frac{3}{4}\right)^{x-3} - 6$
18. Identify a possible value for n that would make this function exponential decay: $f(x) = \left(\frac{8}{n}\right)^x$

Thursday

21. Convert to exponential form: $\log_3 \frac{1}{81} = -4$

22. What is the equation for the line considered to be the asymptote for the function:

$$f(x) = 5^x + 3$$

23. Evaluate the expression: $\log_8 4$

24. A cup of coffee contains 130 milligrams of caffeine. If caffeine is eliminated from the body at a rate of 11% per hour, how long will it take for 90% of this caffeine to be eliminated from a person's body?

25. Mr. and Mrs. Boyce bought a house for \$96,000 in 1995. The real estate broker indicated that houses in their area are appreciating at an average annual rate of 4%. If the appreciation remains steady at this rate, what will the value of the Boyce's house be in 2016?

Friday

1: Evaluate this expression: $4^{\log_4 9}$

2: Solve for x : $\log_6 48 - \log_6 \frac{16}{5} + \log_6 5 = \log_6 5x$

3: Solve for y : $2 \log_2 y - \log_2 (y + 3) = 2$