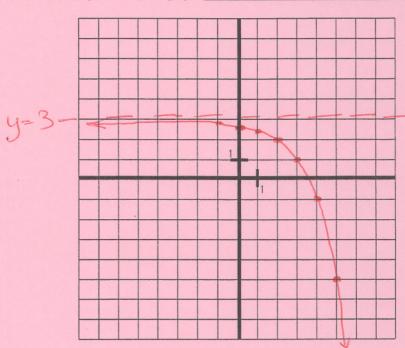[7]   Draw the graph of $f(x) = -2^{x-2} + 3$ by finding and plotting functions values, and connecting to get   **SCORE:** ___ / **10 POINTS**
the shape of the graph. Show the functions values of at least 5 points on your graph. **LABEL ALL ASYMPTOTES CLEARLY.**

x	$f(x)$
0	2.75
1	2.5
2	2
3	1
4	-1

$y=3$

[8]   Find the value of $\log_6 72$ rounded to 4 decimal places.   **SCORE:** ___ / **3 POINTS**

$$\frac{\log 72}{\log 6} = \boxed{2.3869}$$

[9]   Solve $3^x = 2^{x+3}$ algebraically. Round your answer to 2 decimal places.   **SCORE:** ___ / **10 POINTS**

$$x \log 3 = (x+3) \log 2$$
$$x \log 3 = x \log 2 + 3 \log 2$$
$$x \log 3 - x \log 2 = 3 \log 2$$
$$x (\log 3 - \log 2) = 3 \log 2$$
$$x = \frac{3 \log 2}{\log 3 - \log 2} = \boxed{5.13}$$

[10]   The number of bacteria in a colony is given by $B(t) = 12(1.6)^t$. Determine when there were   **SCORE:** ___ / **8 POINTS**
at least 135 bacteria using algebra. Round your answer to 2 decimal places.

$$135 = 12(1.6)^t$$
$$\frac{135}{12} = 1.6^t$$
$$\log \frac{135}{12} = t \log 1.6$$
$$t = \frac{\log \frac{135}{12}}{\log 1.6} = \boxed{5.15}$$