3. [10 points] Suppose:

- $f(x)$ is a function with domain $(-2, 5]$.
- $g(x) = f(x + 5) + 4$.
- $h(x) = 3 + 2^x$.
- $j(x) = -7 + 0.6^x$.

You do not need to show any work for this problem, but you may receive partial credit for correct work shown. Please be sure to **circle** your answers in all parts of this problem.

a. [3 points] What is the domain of $g(x)$? Give your answer using **inequalities**.

b. [3 points] The **point** $(4, -7)$ lies on the graph of $f(x)$. What point MUST lie on the graph of $g(x)$?

c. [2 points] The horizontal asymptote of $y = h(x)$ is:

d. [2 points] $\lim\limits_{x \to \infty} (j(x)) =$