1. [11 points]

    a. [8 points] Indicate if each of the following statements are true or false by circling the correct answer. No justification is required.

        i) If $f(3) = 4$ then the point $(4, 3)$ is on the graph of $y = f^{-1}(x)$.

                                                                   True   False

        ii) If a polynomial $p(x)$ has odd degree, then the function $p(x)$ is an odd function.

                                                                   True   **False**

        iii) If the function $f(x)$ is odd, then the function $g(x) = x f(x)$ is an even function.

                                                                  True   False

        iv) The function $h(x) = 2 - (x - 4)^2$ with domain $x \geq 4$ is an invertible function.

                                                                True   False

    b. [2 points] Compute the value of the following limits:

      Solution: $\lim\limits_{x \to -\infty} \dfrac{2e^x + 1}{5 + x} = 0$ $\lim\limits_{x \to -3^-} \dfrac{-1}{x + 3} = \infty$

    c. [1 point]   Let $f(x) = x^{\frac{1}{5}}$ and $g(x) = 1 + \log(x)$. Which of the functions grows more rapidly as $x \longrightarrow \infty$? Circle your answer.

      Solution:

            $f(x)$ $g(x)$ It can't be determined.