

1. [8 points] For each of the statements below, circle “**True**” if the statement is *definitely* true. Otherwise, circle “**False**”. You do not need to show any work for this problem.

a. [2 points] The function $g(x) = 3^x + \left(\frac{1}{3}\right)^x$ is an even function.

True False

b. [2 points] The graph of $y = \ln(10x)$ can be obtained from the graph of $y = \ln(x)$ by a vertical shift.

True False

c. [2 points] The line $y = 3$ is a horizontal asymptote of the function $f(x) = e^{10000x} + 3$.

True False

d. [2 points] The function $h(x) = 5 \cos(3x)$ is an odd function.

True False

2. [6 points] The graph of the function $g(x)$ contains the point $(-6, 4)$. For each of the functions below, find the coordinates of one point that must be on the graph of the function. Write the coordinates of the point in the form (x, y) on the provided answer blank.

You do not have to show work for this problem.

a. [2 points]

If $h(x) = 0.25g(-0.5x)$, then the graph of $h(x)$ must contain the point _____.

b. [2 points]

If $n(x) = g(x+3) - 4$, then the graph of $n(x)$ must contain the point _____.

c. [2 points]

If $p(x) = -3g(2x-4)$, then the graph of $p(x)$ must contain the point _____.