7. [10 points] For each of the following statements, circle True if the statement is always true and circle False otherwise. No justification is necessary.

Recall the following definitions:

A function f is *even* if $f(-x) = f(x)$ for all x.

A function f is *odd* if $f(-x) = -f(x)$ for all x.

a. [2 points] If $f(x)$ is an odd function and the tangent line to the graph of $f(x)$ at $x = 2$ is $y = 4(x-2)+7$, then the tangent line to the graph of $f(x)$ at $x = -2$ is $y = -4(x+2)-7$.

True [False]

b. [2 points] If $g''(x) = 2^x(x-4)(x+5)^2$, then $g(x)$ has inflection points at $x = 4$ and $x = -5$.

True [False]

c. [2 points] If $h(x)$ is an even function and $\int_{-3}^{8} h(x)\,dx = 17$, then $\int_{-8}^{3} h(x)\,dx = 17$.

[True] False

d. [2 points] If $\int_{3}^{7} p(t)\,dt = -5$, then $\int_{-1}^{3} p(t-4)\,dt = -5$.

True [False]

e. [2 points] If $f(x)$ is a function such that $f''(x)$ is continuous, $f'(3) > 0$, and $f''(3) < 0$, then $f(3+\Delta x) \leq f(3) + f'(3)\Delta x$ for all sufficiently small values of Δx.

[True] False