1. (2 points each) Circle “True” or “False” for each of the following problems. Circle “True” only if the statement is *always* true. No explanation is necessary.

(a) \( \log \left( \frac{1}{A} \right) = -\log(A) \).

True ❌ False

(b) If \( f(x) = \pi^5 \), then \( f'(x) = 5\pi^4 \).

True ❌ FALSE

(c) The function \( y = \frac{a}{b + c e^{-kt}} \) for \( k > 0 \) and \( a, b, c \) constants has a horizontal asymptote of \( y = \frac{a}{c} \).

True ❌ FALSE

(d) A degree 7 polynomial must have at least 1 real root but can not have more than 7 real roots.

TRUE ❌ False

(e) \( f'(a) \) is the tangent line of \( f \) at the point \( (a, f(a)) \).

True ❌ FALSE

(f) If \( f(x) = x^2 \), then \( f^{-1}(x) = \frac{1}{x^2} \).

True ❌ FALSE

(g) Note: This problem was excluded from grading. If \( f''(a) = 0 \), then the point \( (a, f(a)) \) is an inflection point of \( f \).

True ❌ FALSE