Name: _____ Date: _____ Row: _____ Period: _____

Assignment #: _____

a-d

1971 AB 1

Let f (x) = ln(x) for all x >0, and let g(x) = x^2 - 4 for all real x. Let H be the composition of f with g, that is, H(x) =f(g(x)). Let K be the composition of g with f, that is, K(x)= g(f(x)).

a. Find the domain of H.
b. Find the range of H.
c. Find the domain of K.
d. Find the range of K.
e. Find H'(7).

a,c

1972 AB 1

Let f(x) = $4x^3$ - 3x - 1.

a. Find the x-intercepts of the graph of f.
b. Write an equation for the tangent line to the graph of f at x = 2.
c. Write an equation of the graph that is the reflection across the y-axis of the graph of f.

1973 AB 1

Given f(x) = x^3 -$6x^2$ + 9x and g(x) = 4.

a. Find the coordinates of the points common to the graphs of f and g.
b. Find all the zeros of f.
c. If the domain of f is limited to the closed interval [0,2], what is the range of f? Show your reasoning.

a-c

1974 AB 1 BC 1

Given f(x) = | sin x | , $-\pi \le x \le \pi$, and g(x) = x^2 for all real x.

a. On the axes provided, sketch the graph of f.
b. Let H(x) = g(f(x)). Write an expression for H(x).
c. Find the domain and range of H.
d. Find an equation of the line tangent to the graph of H at the point where $x = \frac{\pi}{4}$.

a-c

1981 AB 4

Let f be the function defined by f(x) = $5^{\sqrt{2x^2-1}}$.

a. Is f an even or odd function? Justify your answer.
b. Find the domain of f.
c. Find the range of f.
d. Find $f'(x)$.