Present neatly. Justify for full credit. No Calculators.

Name _____ Score _____ ~10 minutes / A x 2

1. If g is the inverse function of $f(x) = 2x + \ln x$, find $g'(2)$.

2. Find an equation of the tangent line to the curve $xe^y + ye^x = 1$ at the point (0, 1).

Present neatly. Justify for full credit. No Calculators.

Name _____ Score _____ ~10 minutes / F x 2

1. If $f(x) = e^x + \ln x$ and $h(x) = f^{-1}(x)$, find $h'(e)$.

2. Let $g(x) = e^{cx} + f(x)$ and $h(x) = e^{kx} f(x)$, where $f(0) = 3, f'(0) = 5, \text{and } f''(0) = -2.$

a) Find $g'(0)$ and $g''(0)$ in terms of c.

b) In terms of k, find an equation of the tangent line to the graph of h at the point where $x = 0.$