Directions: **No Calculators Allowed**. Determine the exact value of any expression that can be obtained without a calculator. For example, $\log_2 8$ can be written as 3. Combine terms using algebraic methods and rules for exponents, where applicable. For example, $2x+3x$, $5^2 \cdot 5^3$, $\frac{x^5}{x^2}$, and $\ln 3 + \ln 5$ should be rewritten in equivalent forms.

1. $f(x) = \frac{\left(e^x\right)^3}{e^2}$. Solve $f(x) = e^5$ for values of x in the domain of f.

2. $g(x) = \frac{\left(e^x\right)^{1/2}}{e^3}$. Solve $g(x) = e^2$ for values of x in the domain of g.

3. $h(x) = \frac{\left(e^x\right)^2}{e^{1/8}}$. Solve $h(x) = e^{1/4}$ for values of x in the domain of h.

4. $k(x) = \frac{\left(e^x\right)^4}{e^{1/3}}$. Solve $k(x) = e^{1/2}$ for values of x in the domain of k.

5. $j(x) = e^{(2x)} - 3e$. Solve $j(x) = 2e$ for values of x in the domain of j.

6. $m(x) = 3e^{(4x)} - 5e$. Solve $m(x) = e$ for values of x in the domain of m.

7. $p(x) = 6e^{(4x)} - e$. Solve $p(x) = 2e$ for values of x in the domain of p.