MA 141 TEST # 1 Name: _____
September 13, 2000 SS #: _____
Show All Work Row #: _____

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1. (10 pts) Find the equation of the line that passes through the points $(-2, 1)$ and $(2, 3)$.
2. (10 pts) Sketch the graph of the function $P(t) = 4(1 - (0.5)^t)$. Indicate any vertical or horizontal asymptotes.
3. (15 pts) Find the foci of the ellipse $x^2 + 4y^2 = 4$ and sketch its graph.
4. (10 pts) Sketch the graphs of the two functions $f(x) = x^4$ and $g(x) = 4^x$ on the same coordinate system. Clearly indicate the behavior of these functions when $x \to \infty$ and when $x \to -\infty$?
5. Suppose $f(t) = 1 + \ln t$.
   (a) (5 pts) What is the domain of f?
   (b) (5 pts) What is the range of f?
   (c) (5 pts) Sketch the graph of f.
   (d) (5 pts) Find the inverse inverse of f.
   (e) (5 pts) Sketch the graph of the inverse function of f.
6. (10 pts) Solve the equation $7^{x+2} = e^{17x}$ in terms of log.
7. Given the function $f(x) = x^2 + 1$,
   (a) (10 pts) Sketch the graph of $g(x) = f(x + 1)$.
   (b) (10 pts) Sketch the graph of $h(x) = -2f(x) + 2$.