

1998 AP Calculus AB Free-Response Questions

2. Let f be the function given by $f(x) = 2xe^{2x}$.
- (a) Find $\lim_{x \rightarrow -\infty} f(x)$ and $\lim_{x \rightarrow \infty} f(x)$.
 - (b) Find the absolute minimum value of f . Justify that your answer is an absolute minimum.
 - (c) What is the range of f ?
 - (d) Consider the family of functions defined by $y = bxe^{bx}$, where b is a nonzero constant. Show that the absolute minimum value of bxe^{bx} is the same for all nonzero values of b .
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