



2. Let  $f$  be the function defined for  $x \geq 0$  with  $f(0) = 5$  and  $f'$ , the first derivative of  $f$ , given by  $f'(x) = e^{(-x/4)} \sin(x^2)$ . The graph of  $y = f'(x)$  is shown above.
- Use the graph of  $f'$  to determine whether the graph of  $f$  is concave up, concave down, or neither on the interval  $1.7 < x < 1.9$ . Explain your reasoning.
  - On the interval  $0 \leq x \leq 3$ , find the value of  $x$  at which  $f$  has an absolute maximum. Justify your answer.
  - Write an equation for the line tangent to the graph of  $f$  at  $x = 2$ .
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