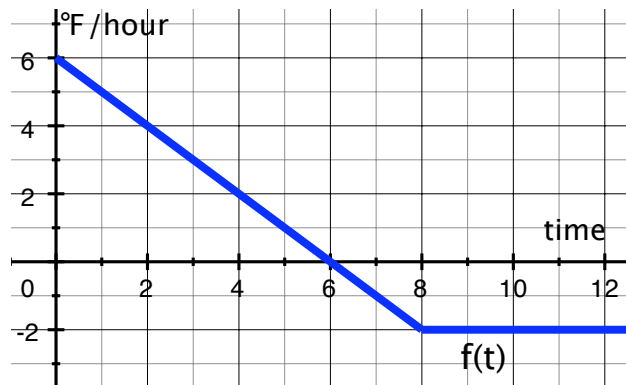


Math 148 Quiz #6
August 3, 2010

Name: _____

Show all work and answers on a separate sheet with a box around your final answer. Calculators are permitted.

1. (5 pts.) Evaluate $\int_1^2 \frac{6}{3x+1} dx$ by using the Fundamental Theorem of Calculus.
2. (5 pts.) Find the total area of the region (or regions) between the curve $y = x^2 - 9$ and the x -axis from $x = -3$ to $x = 6$.
3. Suppose $f(t)$ = the rate of change of the temperature of a room in $^{\circ}\text{F}/\text{hour}$ at hour t . The graph of $f(t)$ for $0 \leq t \leq 12$ is given below.



- (a) (6 pts.) Evaluate $\int_2^{10} f(t) dt$ and interpret this value in terms of temperature of the room. Include units.
- (b) (4 pts.) If the room temperature at $t = 2$ hours is 60°F , then what is the maximum temperature of the room and when does it occur?