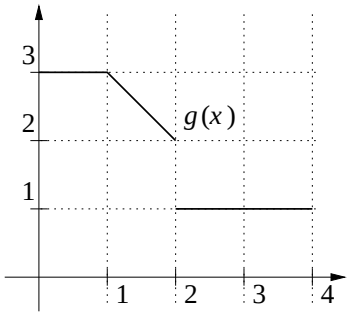
MATH 116-028 QUIZ 3 / 22 Jan 2008 Name:_____

1. Find an explicit formula for the function $A(t)$ giving the area under the curve $y = \frac{\cos\sqrt{x}}{\sqrt{x}} + 1$ between $x = 1$ and $x = t$. Is $A(t)$ concave up or down on the interval $1 \leq t \leq 6$? (4 points)

2. Suppose that $g(x)$ is given by the graph to the right. Find $\int_0^4 x\, g'(x)\, dx$. (3 points)



3. Suppose that the rate at which happy students flock to calculus II is given by $r(t) = t^2 e^{t/10}$ students/week, where t is measured in weeks since the start of the registration period. How many students added calculus II between the fifth and eight weeks after the start of registration? Be sure that all of the steps in your calculation are clear. (3 points)