

PRINT Your Name: \_\_\_\_\_

**Quiz 1 — January 19, 2011 – Section 4 – 9:05-9:55 recitation.**

**Remove everything from your desk except this page and a pencil or pen.**

**Circle** your answer. **Show your work.**

The quiz is worth 5 points.

Find  $\int_1^2 x\sqrt{x-1}dx$ .

**Answer:** Let  $u = x - 1$ ; so  $u + 1 = x$  and  $du = dx$ . When  $x = 1$ , then  $u = 0$ .  
When  $x = 2$ , then  $u = 1$ . The integral is equal to

$$\int_0^1 (u+1)\sqrt{u}du = \int_0^1 (u^{3/2} + u^{1/2})du = \frac{2}{5}(u^{5/2}) + \frac{2}{3}u^{3/2} \Big|_0^1 = \frac{2}{5} + \frac{2}{3} = \boxed{\frac{16}{15}}.$$