

Name: \_\_\_\_\_

Score: \_\_\_\_\_

1. Evaluate each of the following integrals.

(a)  $\int x \sin x dx$  (2 points)

(b)  $\int_1^e t \ln t dt$  (2 points)

(c)  $\int e^y \cos(2y) dy$  (3 points)

2. Show that  $\int_0^{\pi/2} \cos^n x dx = \frac{n-1}{n} \int_0^{\pi/2} \cos^{n-2} x dx$  for  $n \geq 2$ , using integration by parts.  
(3 points)