**MATH 2554 (Calculus I)**
**Summer 2015**

Name: _____

Tues 14 July 2015

# Quiz 12: Integrals ($\oint$5.4-5.5)

**Directions:** You have 30 minutes to complete this quiz. Collaborative and open book.

1. Evaluate the following integral. If possible, use symmetry.

$$\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \left(\cos(2x) + \cos x \sin x - 3\sin(x^5)\right)\ dx$$

2. Find the point(s) at which the given function equals its average value on the given interval.

$$f(x) = \frac{\pi}{4}\sin x \quad \text{on} \quad [0, \pi]\,.$$

3. Find the area of the region bounded by the graph of

$$f(x) = \frac{x}{\sqrt{x^2 - 9}}$$

and the $x$-axis between $x = 4$ and $x = 5$.

4. Evaluate the following indefinite integrals.

(a) $\displaystyle\int \frac{(\sqrt{x}+1)^4}{2\sqrt{x}}\,dx$

(b) $\displaystyle\int (x+1)\sqrt{3x+2}\,dx$