

Answers to Exam 2

1. (a) **FALSE**
- (b) **FALSE**
- (c) **FALSE**
- (d) **FALSE**

2.  $\sqrt{x^2 - 9} - 3 \tan^{-1} \left( \frac{\sqrt{x^2 - 9}}{3} \right) + C$

3.  $u = \ln x, dv = x^2 dx$

4.  $-(\cos^3 x)/3 + (\cos^5 x)/5 + C$

5.  $\frac{\ln 15}{2}$

6. Converges to  $\sqrt{3}\pi/9$

7. 0.9045238

8. (a)  $\sqrt{5 - 4x^2} - \sqrt{5} \ln \left| \frac{\sqrt{5} + \sqrt{5 - 4x^2}}{2x} \right| + C$

(b)  $\frac{1}{2} \ln \left| x^2 + \sqrt{x^4 - 3} \right| + C$

(c)  $2e^{\sqrt{x}}(\sqrt{x} - 1) + C$