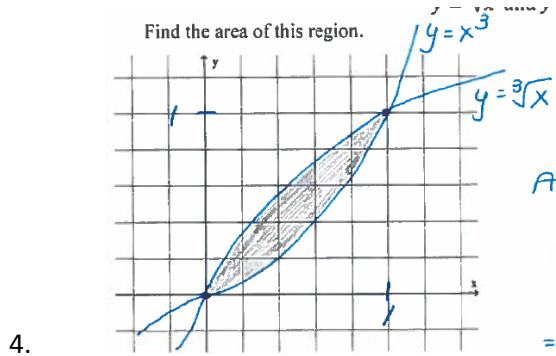


Calculus II Spring 2016 Final Exam Answers

1a. $\frac{7}{9}$

1b. $\sin x - \frac{1}{3} \sin^3 x + C$

1c. $\frac{1}{7} x \sin 7x + \frac{1}{49} \cos 7x + C$

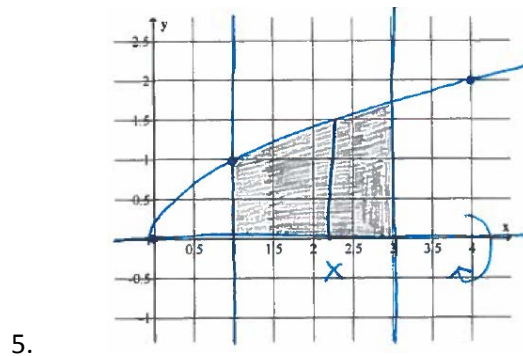


Area = $\frac{1}{2}$

1d. $-2 \ln|x - 5| + 2 \ln|x - 20| + C$

2. $\frac{x}{\sqrt{25+x^2}} + \frac{\sqrt{25+x^2}}{5} + C$

3. $\lim_{b \rightarrow \infty} \int_0^b e^{4x} dx$, diverges



Volume = 4π

6. $\int_0^2 \sqrt{1+(2)^2} dx + \int_0^2 \sqrt{1+(2x)^2} dx$

9. 3

7. $\pi \approx 4 \cdot \frac{1}{3} \left(1 + 4 \cdot \frac{16}{17} + 2 \cdot \frac{4}{5} + 4 \cdot \frac{16}{25} + \frac{1}{2} \right)$

10a. $0 < x < 2$

10b. $x = 0, 2$

8a. converges

11a. $1 - 4(x+1) + 6(x+1)^2 - 4(x+1)^3 + (x+1)^4$

8b. diverges

11b. $\sum_{n=0}^{\infty} \frac{(-1)^n 2^{2n+1}}{(2n+1)!} \cdot x^{2n+1}$

12. $A = (0,0), B = (0.9, \frac{\pi}{6}), C = (1, \frac{\pi}{4}), D = (0.9, \frac{\pi}{3}), E = (0, \frac{\pi}{2}), F = (-0.9, \frac{2\pi}{3}), G = (-1, \frac{3\pi}{4}), H = (-0.9, \frac{5\pi}{6}), I = (0, \pi)$

