

Calculus II Spring 2018 Final Exam Answers

1a. 20

1b.  $\frac{1}{4}x^2 \ln x - \frac{1}{8}x^2 + C$

1c.  $\frac{1}{3}$

1d.  $\frac{1}{3}\sec^3 x + C$

1e.  $\frac{1}{25} \frac{\sqrt{25-x^2}}{x} + C$

1f. diverges

1g.  $-\ln|x| + \ln(x^2 + 4) + C$

2.  $40,000\pi^3 \text{ ft}^3$

3.  $\frac{37}{3}$

4a. converges

4b. converges

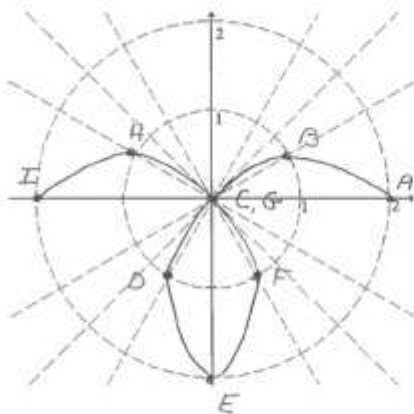
4c. diverges

4d. converges

5. Interval of Convergence  $(2, 4]$ ; Radius of Convergence 1; Absolute Convergence  $(2, 4)$ ; Conditional Convergence  $x = 4$

6.  $-8 + 12(x + 2) - 6(x + 2)^2 + (x + 2)^3$

7.



	$\theta$	$r$
A	0	2
B	$\frac{\pi}{6}$	1
C	$\frac{\pi}{4}$	0
D	$\frac{\pi}{3}$	-1
E	$\frac{\pi}{2}$	-2
F	$\frac{2\pi}{3}$	-1
G	$\frac{3\pi}{4}$	0
H	$\frac{5\pi}{6}$	1
I	$\pi$	2