

Answer Key

Math 1272 Spring 2005 Final Exam

Multiple Choice Problems

1. D
2. B
3. B
4. C
5. B

6. A
7. B
8. A
9. C
10. E

11. E
12. B*
13. A
14. E

*using Stewart's ordering
of the coordinates

Written Answer Problems

15.
 - a) $\sin(1+x^2) - x^2 \cos(1+x^2) + C$
 - b) $[x + 8(1 + \sqrt{x}) - 2(1 + \sqrt{x})^2 - 4 \ln|1 + \sqrt{x}|] \Big|_0^4$
 $= 4(1 - \ln 3) < 0$
16.
 - a) $y = 3 \pm A e^{\tan^{-1}(x)}$ (trivial solution: $y = 3$)
 - b) $y = 3 + 2002 e^{\tan^{-1}(x)}$
17.
 - a) $y' = \sqrt{e^{2x} - 1}$
 - b) $e^2 - 1$
18.
 - a) $x^3 - x^5 + \frac{1}{2}x^7 - \frac{1}{3}x^9 + \frac{5}{24}x^{11}$
 - b) $f^{(7)}(0) = (7!)/2 = 2520$
19. radius of convergence: $R = \frac{1}{2}$;
interval of convergence: $[-3/2, -1/2)$
20.
 - a) $\cos \theta = 26/29$
 - b) area: $\frac{1}{2}\sqrt{27} = \frac{3}{2}\sqrt{3}$
 - c) volume: 27