

MATH 104 – Sample Final Exam 1 Answers

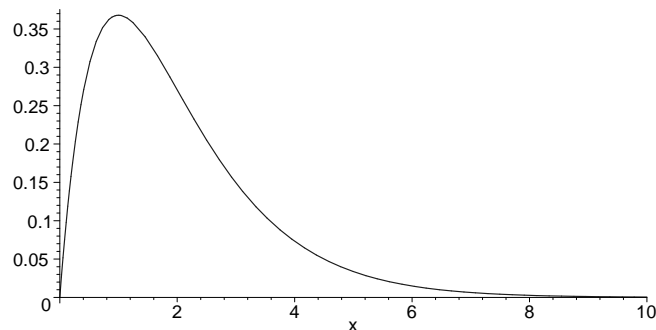
1. E	2. D	3. D	4. E	5. B	6. E
7. D	8. D	9. A	10. C	11. D	12. D
13. B	14. B	15. D	16. B	17. A	18. B
19. C					20. E

MATH 104 – Sample Final Exam 2 Answers

1. C	2. D	3. D	4. A	5. C	6. E
7. C	8. B	9. F	10. A	11. F	12. D
13. D	14. E	15. D	16. A	17. F	18. A
19. D					20. D

MATH 104 – Fall 2002 Final Exam Answers

1. $y = 32x^3$ 2. $8/3$ cubic units 3. $2\pi(17^{3/2}) - 5^{3/2}$ cubic units
 4. $y = \frac{2x^3 + 3x^2 + 6}{6(x+1)^2}$ 5. (a) $\frac{dy}{dt} = ky^2, y = \frac{1}{C - kt}$ (b) $y = \frac{40}{4-t}, 4$ hours
 6. $-1/16$ 7. $\ln \left| \frac{x-2}{x-1} \right| + C$ 8. $2/15$
 9. x -intercept = y -intercept = $(0,0)$. Horizontal asymptote $y=0$. Global max at $(1, 1/e)$, Inflection point at $(2, 2/e^2)$.



10. $\frac{\pi^2}{4} + \frac{\pi}{2}$ cubic units 11. Diverges (at 0) 12. 7 13. Converges conditionally.
 14. (a) $\int_0^{1/2} (1 - x^2 + \frac{x^4}{2}) dx = \frac{443}{960}$ (b) Alternating: abs(Error) less than first omitted term = $\int_0^{1/2} (\frac{x^6}{6}) dx = \frac{1}{5376}$
 15. (a) $\rho = 1$, converges on $(4,6)$ (b) diverges at both ends (n th term test).
 16. (a) $10 + \frac{1}{20}(x - 100) - \frac{1}{8000}(x - 100)^2$. (b) Alternating: abs(Error) less than first omitted term = $1/1,600,000$
 17. $\pi/2$ 18. Converges by comparison with $\sum \frac{1}{n^2}$ (note $\log_n(n!) < n$)