

Mu Alpha Theta National Convention: Seattle, 1997
Calculus General Test Answers

Application	Ciphering	Individual
1. C	1. $(6 \pm 2\sqrt{5}, 11)$	1. C
2. D		2. C
3. A	2. $\frac{436}{7}$	3. D
4. D		4. D
5. D	3. $-t^2 \cos t + 2t \sin t$	5. B
6. C	$+ 2 \cos t + C$	6. A
7. A	4. 10	7. C
8. E	5. $\frac{1}{10}$	8. A
9. D		9. C
10. C	6. $\frac{857}{4095}$	10. A
11. A		11. B
12. C	7. 20%	12. D
13. A	8. $\frac{128\sqrt[4]{125}}{25}$	13. E
14. B		14. B
15. B	9. $\frac{9}{2}$	15. B
16. E		16. C
17. C	10. $12 + 4\sqrt{3}$	17. C
18. B		18. E
19. C		19. B
20. D		20. C
21. B		21. D
22. B		22. E
23. D		23. A
24. A		24. A
25. A		25. D
26. C		26. D
27. C		27. D
28. D		28. E
29. B		29. B
30. E		30. C
		31. C
		32. D
		33. B
		34. D
		35. D
		36. E
		37. E
		38. E
		39. A
		40. C

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School Bowl

State Bowl

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|--|---|-------------------------------------|-------------------------------|
| 1. $\frac{1}{3}$ | 26. $4\sqrt{6}$ | 1. $\sqrt{2}$ | 33. $6\sqrt{6} + 6\sqrt{2}$ |
| 2. 124 | 27. 196 | 2. 20 | 34. $\frac{8+\pi}{16}$ |
| 3. $\frac{3}{5}$ | 28. 48 | 3. 0 | 35. $\frac{8192\pi}{3}$ |
| 4. $\frac{\sqrt[3]{4}}{2}$ | 29. 9 | 4. $(n+1)! - 1$ | 36. 2900 |
| 5. 310 | 30. $253 + 4\sqrt{6}$ | 5. 11 | 37. $\frac{21\sqrt{377}}{29}$ |
| 6. $3 - 2\sqrt{2}$ | 31. $2\sqrt{22}$ | 6. ± 6 | 38. 97 |
| 7. $\left(-11, \frac{116}{3}, \frac{173}{6}\right)$ | 32. 18 | 7. 44664 | 39. $864 + 432\sqrt{3}$ |
| 8. 10582 | 33. $2\sqrt{233}$ | 8. -12 | 40. $\frac{7}{13}$ |
| 9. 18 | 34. 79 | 9. 36 | 41. 1960 |
| 10. $908 + 36\sqrt{2}$ | 35. 4740 | 10. 20 | 42. $\frac{264}{143}$ |
| 11. 6 | 36. 25 | 11. 19 | 43. 31 |
| 12. $\sqrt{x^2 - 1}$ | 37. 768 | 12. 17 | 44. $e^{-\frac{\pi}{3}}$ |
| 13. 607500π | 38. $\frac{3}{4}$ | 13. $\frac{65}{11}$ | 45. $\frac{5\sqrt{13}}{2}$ |
| 14. $\frac{x^2}{2} + 7x - 14\ln x-2 + 40\ln x-3 + C$ | 39. $-\frac{15}{8}$ | 14. 20 | 46. 7 |
| 15. $101250 + 7\sqrt{x^2 - 1}$ | 40. -7200 | 15. $\frac{\sqrt{214}}{2}$ | 47. $-57x + 27y + 14z = 23$ |
| 16. $\frac{135\sqrt{3}}{7}$ | 41. $\ln 2 - \frac{1}{2}$ | 16. $\frac{9\sqrt{3}}{4}$ | 48. 500 |
| 17. $\frac{11}{3}$ | 42. 234 | 17. 10 | 49. $800 - 400\sqrt{3}$ |
| 18. 3 | 43. $8e^{4e^2}$ | 18. $\frac{2}{41}$ | 50. 450 |
| 19. $2 + \sqrt{21}$ | 44. 120 | 19. 10010 | 51. -106 |
| 20. 462 | 45. $\frac{707}{2} + \ln 2 + 8e^{4e^2}$ | 20. $9e - 24$ | 52. 140 |
| 21. $\frac{\sqrt{6}}{4}$ | 46. 10 | 21. 10 | 53. 24 |
| 22. $\frac{25}{8}$ | 47. $\frac{576 - 261\sqrt{3}}{4} \pi$ | 22. 1232 | 54. $\frac{103}{288}$ |
| 23. 1021 | 48. $-\frac{1}{6}$ | 23. 50 | 55. $\frac{41\pi}{6}$ |
| 24. $\frac{1}{2}$ | 49. $\frac{2 - \sqrt{3}}{4}$ | 24. $\frac{15}{31}$ | 56. 8π |
| 25. 7147 | 50. $\frac{407 - 130\sqrt{3}}{2}$ | 25. $\frac{\sqrt{6} + \sqrt{2}}{2}$ | 57. $\frac{11}{29}$ |
| | | 26. $\frac{7}{13}$ | 58. $\frac{1}{12}$ |
| | | 27. 1953 | 59. 161 |
| | | 28. 3315 | 60. 210210 |
| | | 29. 6 | |
| | | 30. $\frac{16\sqrt{7}}{7}$ | |
| | | 31. 51529 | |
| | | 32. $\frac{3\pi}{8}$ | |