

Math 2934 homework

11. (9/26) As many of 9-26 as needed. Hand in 14.2 # 5, 7 (note that $y = x^3$), 12 ($\sin^{-1} t$ means the inverse sine function from Section 7.6, now would be a good time to review them), 13, 15-16, 20, 26.
12. (9/26) 14.2 # 34, 36. 14.3 # 3 (hint: what is $(e^{t/2} + e^{-t/2})^2$?), 4, 15.
13. (9/26) 14.3 # 13, 17(a), 19(a), 32 (use formula 11), 40
14. (9/29) As many of 14.4 # 3-16, 33-38 as needed. Hand in 14.4 # 4, 8, 16, 22, 35.
15. (9/29) As many of 15.3 # 15-42 as needed. Hand in 15.3 # 19, 24, 25, 37-40, 49, 50.
16. (10/5) 15.1 # 14, 15, 26, 30, 55-60, 63 (note that the level surfaces are different depending on whether $c > 0$, $c = 0$, or $c < 0$)
17. (10/5) 15.3 # 47, 48, 77, 81 (do using implicit differentiation, not by solving for R), 89 (use implicit differentiation to compute $\frac{\partial z}{\partial x}$)
18. (10/14) 15.4 # 3 (do using the formula, and do it again by finding \vec{v}_x and \vec{v}_y , computing the normal vector $\vec{v}_x \times \vec{v}_y$, and using the normal vector to write down the equation of the tangent plane), 18, 33, 36, as many as needed from 15.5 # 1-26, hand in 15.5 # 4, 8, 12, 15, 25.
19. (10/14) 15.5 # 39, 43, 48, 15.6 # 7, 8, 11 (you will need to find a unit vector in the direction of \vec{v}), 12, 14, 21, 22
20. (10/24) 15.6 # 18, 19, 20, 28, 38, 47
21. (10/24) 15.7 # 2, 7, 14 (no need to do the software part on 7 and 14), 29, 34. On the following, analyze the problem and give the function to be maximized or minimized and its domain, but do not carry out the calculation to actually find the extreme value: 15.7 # 39, 42, 44, 45.
22. (10/28) 16.2 # 5, 9, 13 (recall that $\sin^2(\theta) = \frac{1}{2}(1 - \cos(2\theta))$), 18, 23, 24.
23. (10/28) 16.3 # 5, 6, 10, 13, 15, 21, 27. As many as needed of 39-50, including at least 43, 44, 47.
24. (10/28) 16.4 # 5, 6, 7, 8, 15, 22, 24, 29, 30
25. (11/2) 16.5 # 5, 12, 13