

**Homework Set 6**

DUE: MAR 16, 2020 (AT THE BEGINNING OF CLASS)

**To be handed in:***Please write your solution to Problem 1 on a single sheet of paper!*

1. Find the tangent plane at the point  $(\frac{10+\sqrt{3}}{2}, 0, \frac{1}{2})$  to the surface

$$(5 - \sqrt{x^2 + y^2})^2 + z^2 = 1,$$

using the fact that the above equation implicitly defines  $z$  as a function of  $x, y$  near this point.

Extra credit (1 point): Sketch the surface defined by the above equation.

NOT to be handed in (but recommended for you to practice with):

3. Textbook (5th edition) Section 13.5, Exercises 1-8, 13-14, 23-25, 27, 29
4. Textbook (5th edition) Section 13.6, Exercises 1-5, 17-19, 21-25
5. Textbook (5th edition) Section 13.7, Exercises 5-9, 17-23, 51-54