Problem 1. a) yes b) 1

Problem 2. Abs. max is 4 at (0, 2), abs. min is -1 at (-1, 0)

Problem 3. Ask in class. You may use the equation for the cone
\[ z = \frac{h}{r} \sqrt{x^2 + y^2} \] for \( 0 \leq x^2 + y^2 \leq r^2 \) (or \( 0 \leq z \leq h \)) and the formula for the surface integral.

Problem 4. 2/3

Problem 5. a) \( 3(y - 1) + (z + 1) = 0 \) b) \( \frac{2}{\sqrt{5}} \)

Problem 6. a) \( 2\pi \left( \frac{2\sqrt{3}}{3} - \frac{1}{12} \right) \); b) 0

Problem 7. \( \pi \)

Problem 8. \( \frac{4\sqrt{3}}{3}(3\sqrt{3} - 1) \)

Problem 9. -2

Problem 10. -1