Math 53 (Multivariable Calculus), Section 102 & 108
Week 4, Wednesday
Sep 14, 2022
For the other materials: seewoo5.github.io/teaching/2022Fall

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1. Find unit vectors that are orthogonal to $(1, 1, 0)$ and $(1, 0, 1)$.
2. Let $\mathbf{r} = \langle x, y \rangle$, $\mathbf{a} = \langle 1, 1 \rangle$, $\mathbf{b} = \langle 1, -1 \rangle$. Show that the vector equation $(\mathbf{r} - \mathbf{a}) \cdot (\mathbf{r} - \mathbf{b}) = 0$ represents a circle.
3. For three points $P(1, 0, 1), Q(-2, 1, 3), R(4, 2, 5)$, find a nonzero vector orthogonal to the plane through the points P, Q, and R. Find the area of triangle PQR.