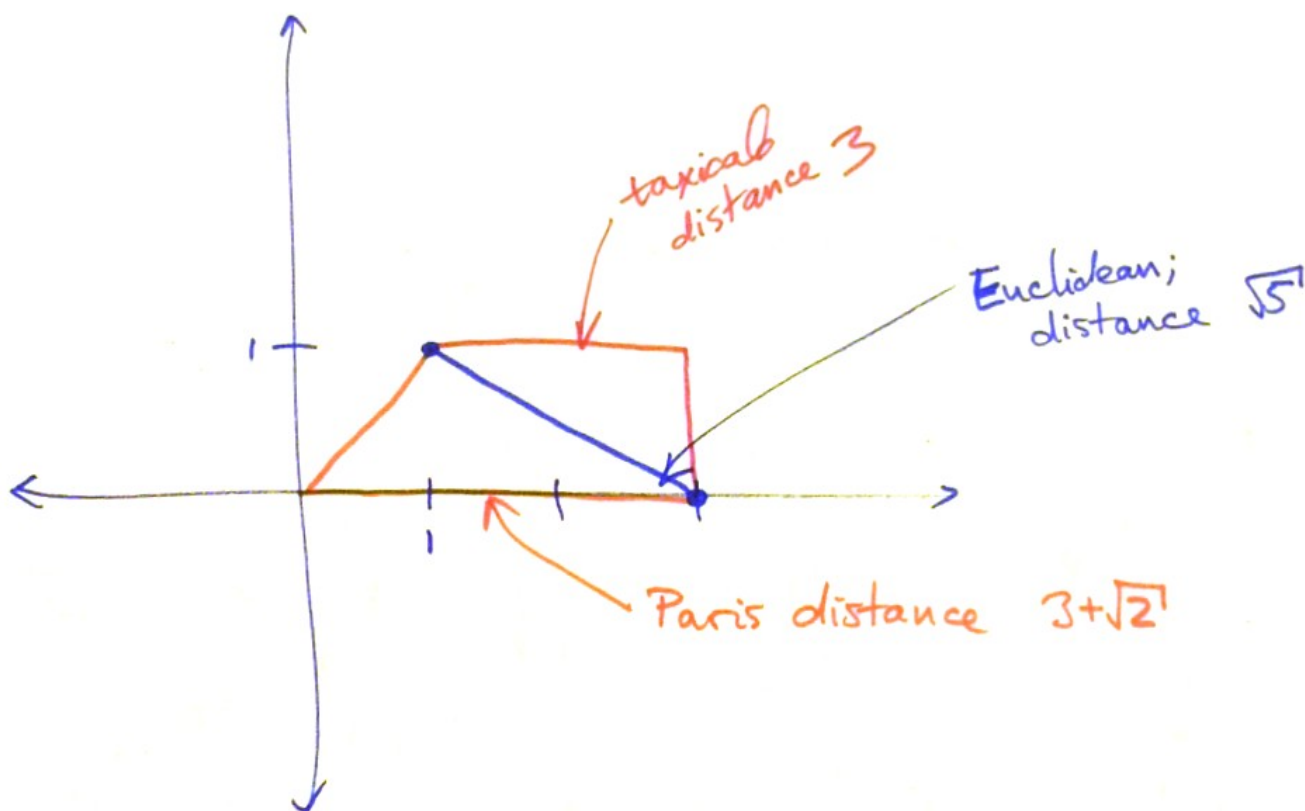


Two pages, 4 problems, 10 points. Show all work. No calculators.

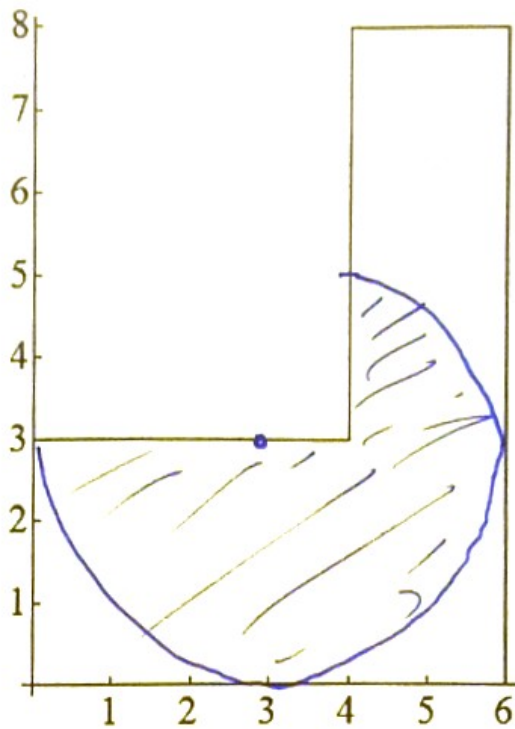
Problem 1 (6 points). Draw the points $(1, 1)$ and $(3, 0)$ in the plane. Compute the distance between them and draw a geodesic using each of the following metrics: Euclidean, taxicab, Paris (make sure to label the geodesics).



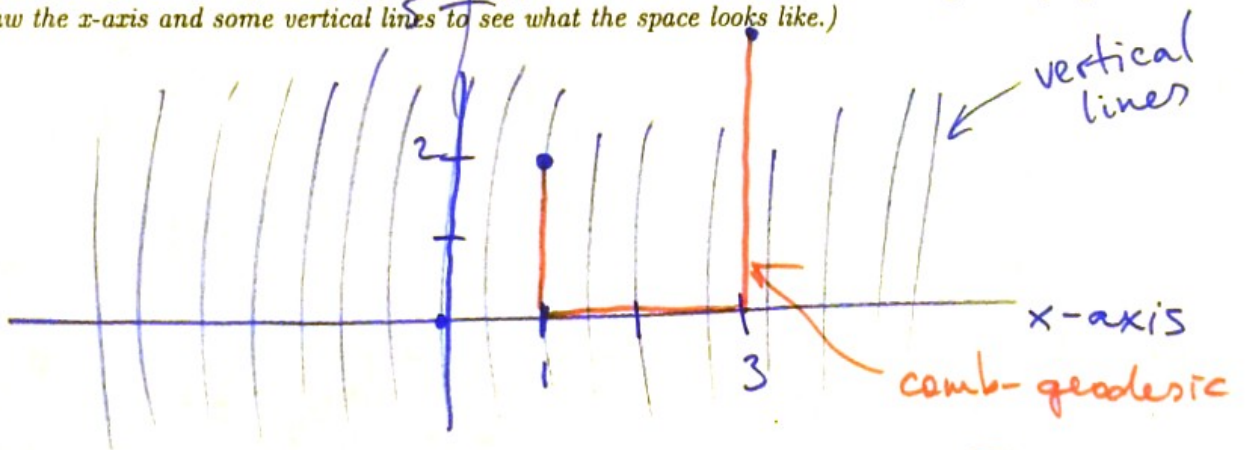
Problem 2 (1 point). What is a triangle (in general, not just in the plane)?

3 points & geodesics between them.

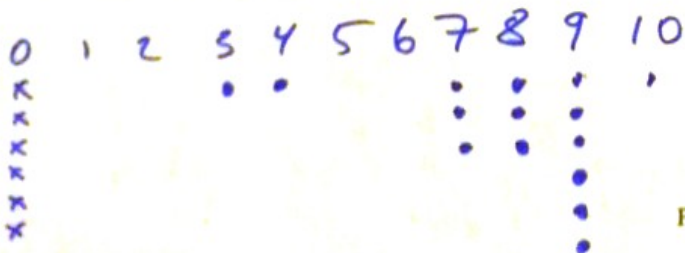
Problem 3 (2 points). For the following hallway, draw (on the picture) a hallway-disk of radius 3 centered at the point (3,3).



Problem 4 (1 point). The Polish comb geometry is a geometry on the plane in which you can only move along vertical lines or along the x-axis. But you can't move, for example, along the line $y = 1$. How far are the points (1,2) and (3,5) from each other in the Polish comb geometry? (Hint: draw the x-axis and some vertical lines to see what the space looks like.)



distance : $2 + 2 + 5 = 9$.



Avg: 7.9	4 / no-shows
Median: 8	5.4
	7.25