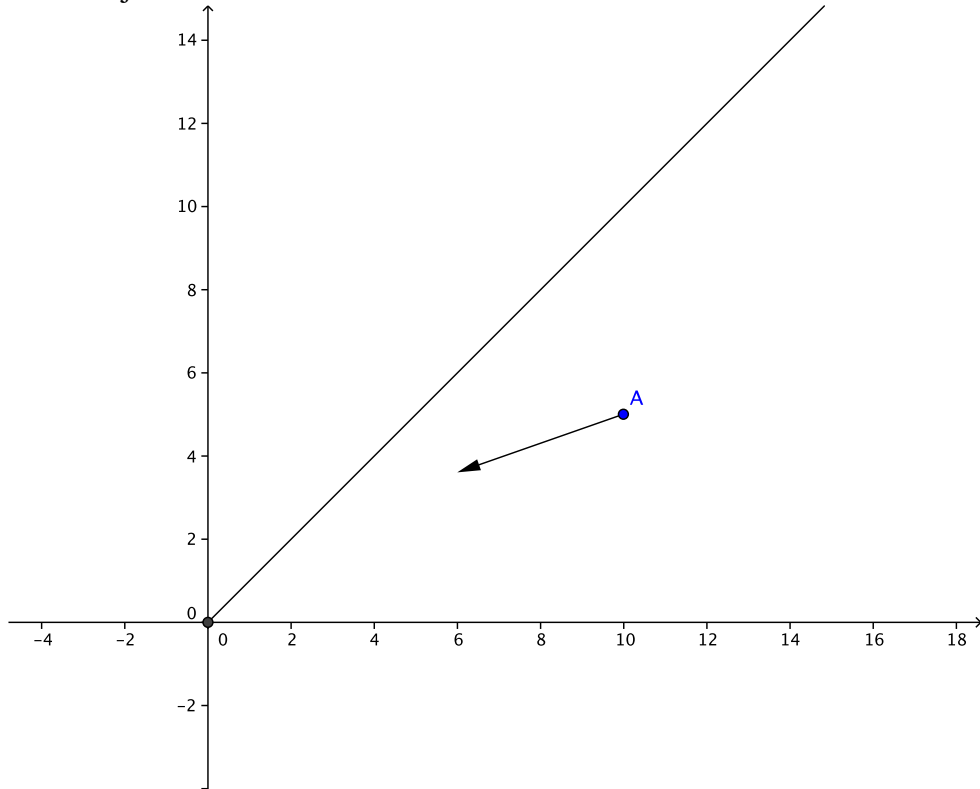


Exercise sheet 1

Exercise 1. Draw the picture in the (x, y) -plane describing the trajectory of the mass-points X and Y with equal masses starting with $x(0) = 10$, $y(0) = 5$, $V(0) = -4$ and $v(0) = -1$. How many shocks does one observe? Are there trajectories with more shocks?



Exercise 2. Let D be an ellipse with foci F and F' . Draw a trajectory of the billiard D starting at F . What do you observe? Can you prove your conjecture?