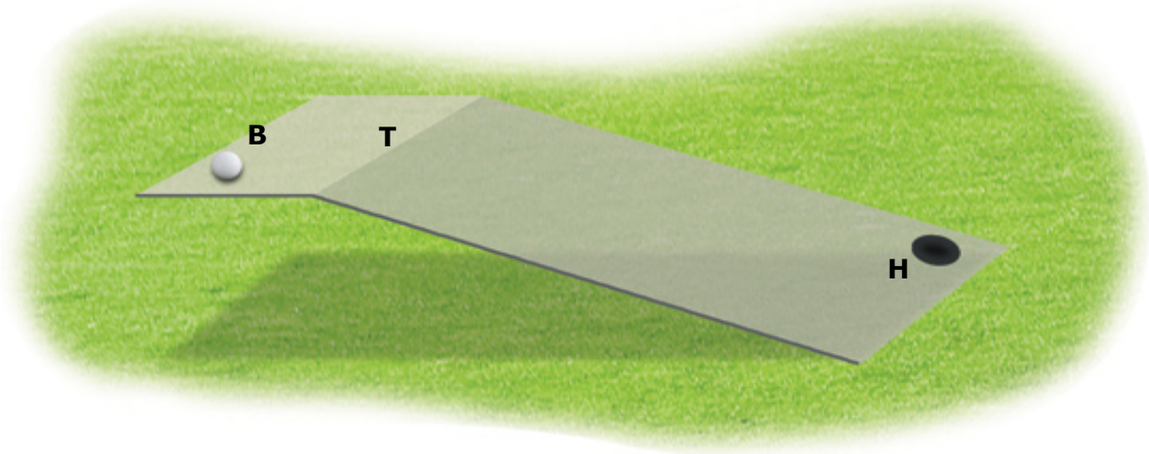
1st example: Ball on a flat and level surface that has to go down to a hole on a sloping surface.

• ***Fig. 7.1***



It's easy to anticipate that the ball will follow a straight line till transition **T** and then start a parabola going down to the hole, we hope. But there are a lot of straight lines that can reach **T** and there are also lots of parabolas from **T** to the hole. This is a bit different from what we saw when studying pure parabolas. Then , for every parabola we always had a starting point, the ball, and a finishing point, the hole. Here we have a finishing point but we need to choose/discover where the parabola starts. After this there's no problem to draw the straight line from the ball to transition **T**.

My approach to this problem is to study the putt from transition **T**. Let's have a look from above. The ball rests on a flat and level part of the green and the hole is in the sloping area. Line **T** is the frontier between the two.

The ball, on its way to the hole must cross **T** but we don't know where exactly. We only know that the ball will move straight to a mysterious point **X** and from there it will break to the right and start drawing a parabola till the hole. Drawing two straight lines (red) can help a little bit. (Fig. 7.2)

• ***Fig. 7.2***