

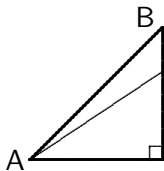
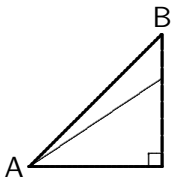
Problem: Billiard Paths

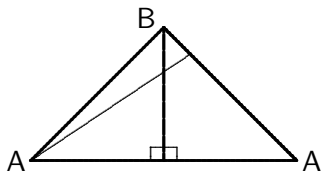
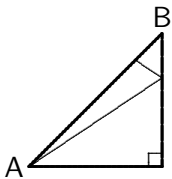
Joel Reyes Noche

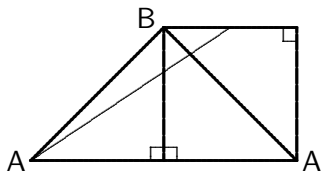
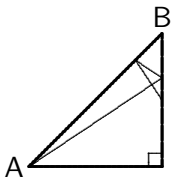
2016 ACM ICPC Philippines Southern Luzon Invitational Programming Contest

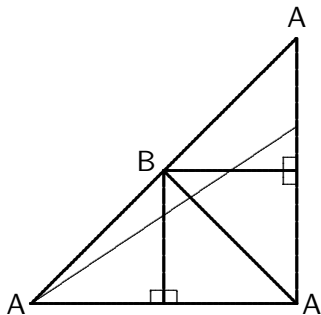
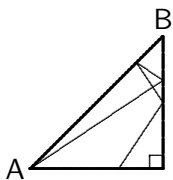
October 1, 2016

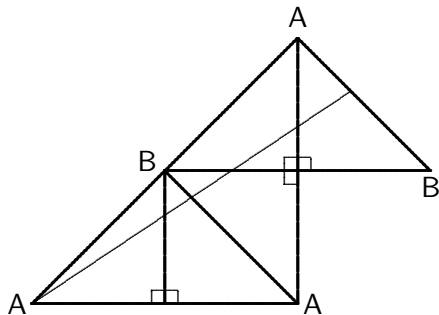
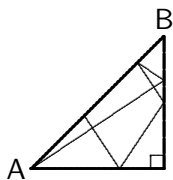
Paths can be unfolded into a straight line

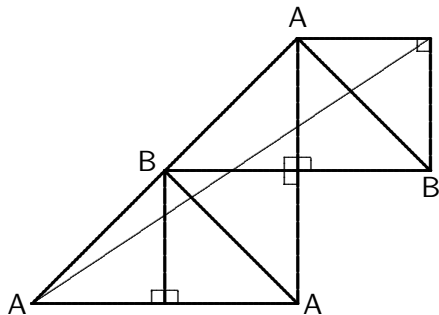
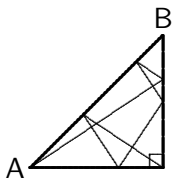








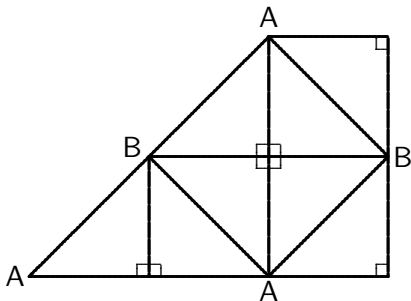




Paths with rational slopes

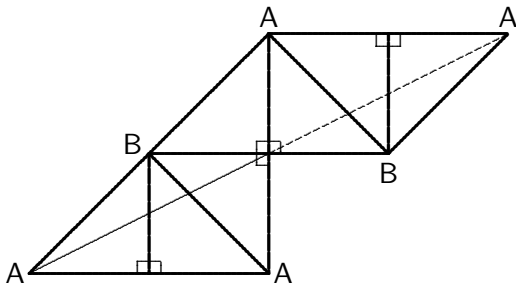
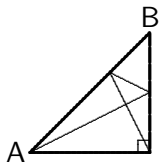
If the slope is m/n , where m and n are co-prime, then

- ▶ the path ends at vertex B if $n + m$ is even
- ▶ the path ends at vertex C if $n + m$ is odd



A path will never end at vertex A

It will either hit vertex C first...



A path will never end at vertex A

...or it will hit vertex B first

