1 The T_x intercept theory

The theory of T is used for a line that has many random curves. The needed data for this equation are angles a_1 and a_2. a_1 is the starting angle of the line, while a_2 is the angle of the 2nd curve in the line. This line can have an infinite amount of curves after these two, but they will not be taken into account when using this theory. The first equation is as follows.

$$Q = \min(A_1, A_2) \quad \text{and} \quad P = \max(A_1, A_2)$$

$$\min(T) \quad \text{and} \quad \max(T)$$

$$\sum_{i=\min(T)}^{\max(T)\vee n} \left(h = \sqrt{P - Q} \times \left(\frac{+1}{-2} \right) + b \right)$$

2 About The T_x intercept Equation

The equation we take our first angle and the 2nd angle in the curved line becuase the line can have an inf amount of curves the true X intercept will never be known but we can take out best guess based on the equation B is our point on the Y Axis the square root of our max angle minus our min angle is taken this is the slope for our img line the 1/2 being either positive or negitive based on the way the line is going + if its going up - if the line is going down. much like finding electron loction we will never be able to find our the precise X intercept but we can get close. We use a sum function to take the iteration from our min point and our max point in our T array. The reason for the n var is becuase we can go till we hit n which is the accurate location of the X intercept but it is hard to find but it will be a number in the min max part of the T array so it does exist.

3 What Is The T Array

After talking so much about the T array it is important to go over what it is. A T array is an array that takes into account the lines direction as it changes with each curve made the the distance traveled by the line during its curving period. When a new curve is made on the line it takes up space on a graph while this could be so small and hard to notice a curve when being made will move some distance on the X axis the only case this is no true is when the curve as a degree of 0 or less than 90 becuase on a 2D graph the line after this curve will move back into the negative space. The following shows how a T array is formated.

$$T = \begin{bmatrix} J \leftarrow \text{first number of steps on the x-axis made while the curve is formed,} \\ K \leftarrow \begin{array}{l}\text{number of steps taken after the first curve is made,} \\ \text{indicating how far this line goes down the Y,}\end{array} \\ L \leftarrow \text{the number of steps taken by the 2nd line,} \\ G \leftarrow \text{how far the line is from the X-axis,} \\ H \leftarrow \text{line slope,} \\ i - i \leftarrow 4 \text{ down units away from } n \text{ and } 4 \text{ units up away from } n \end{bmatrix}$$

the min and max that we take from the T array is i-4 i+4. i and n are the same just stated differntly becuase we can never know n we use the square root of P-Q vars used earlier in the first equations.

4 Examples using T_x

$$Q = \min(120_1, 90_2) \quad \text{and} \quad P = \max(120_1, 90_2)$$

$$\sum_{i=\min(2)}^{\max(10)\vee n} \left(h = \sqrt{120 - 90} \times \begin{pmatrix} -1 \\ -2 \end{pmatrix} + 8 \right)$$

$$T = \begin{bmatrix} 2 & 6 & 0 & \approx 2 & \sqrt{30} & 2 - 10 \end{bmatrix}$$
$$\min(T) \quad \text{and} \quad \max(T)$$

The T shows the info about this random line and finding the X intercept. 2 is the first steps taken on the X 6 is how far it moves down the Y we use 0 next becuase the angle is 90 degrees the square root of 30 is the line slope and 2-10 is our X intercept range. But why is 2-10 the way we can get this is by finding the nearest perfect square such as $sqrt36$ which is near $sqrt30$ and this will be our starting point

5 Using T_x when both angles are 90 degrees

This is very simple when both angles are 90 and the only time we can get very close to a correct intercept. First you get the 1st step from the T array and go to that point on the graph. Next move down the target number of steps again using img data from the T array. Next make the new angle and move the target number of steps to the point. Once you are add this point dash a line through the X axis like you are extending the line you have. This is how 90 degree angles are drawn when using T_x while this line might look like it keeps going this like its just img and can exist anywhere. The reason for dashing is becuase the line is random it can curve at anytime but if it does not then this is the best X intercept for the line.

6 Answering T_x Problems

To see the following problem refer to the one *Examples* Section. The answer to this problem would be this:

$$h = \sqrt{30} \times \frac{-1}{-2} + 8 \approx T$$

The name of this form it T_h form and it used to show the answer to the of T_x Problems.