Mining Formula

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May 5, 2022

1 Mining formula

the block is mined by the miner who wins the competition among the other miners. There will be an inequation structured to first of all keep the mining rate at a constant value, secondly provide the miners with higher stake and more activity a better chance of mining.

Definition. Main equation of mining:

$$hash(concatenate(CurrentBlockHeader, Timestamp)) =< MiddleOf64BytesHexNumber * B * D * C \quad (1)$$

Definition. D is denoted for difficulty factor:

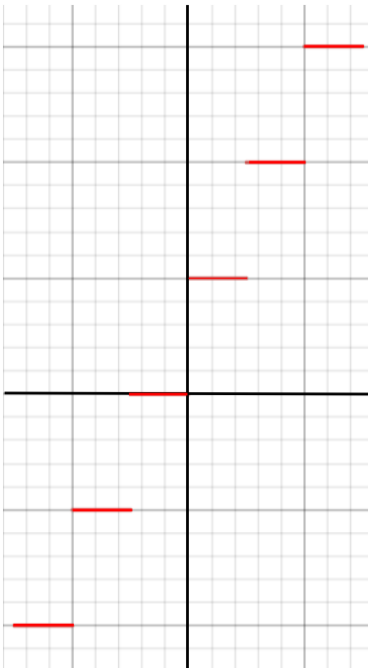
D = current average of time elapsed to mining a block / wanted constant time of mining a block

Definition. B is denoted for booster factor:

Booster will improve user's chance to mine a block based on the user's UTXO and UTXO's time weight

B = F (max of F , max of x , stairs length)

F (max of F, max of x, stairs length): a mathematical function works like a floor function, but growth manually. The number of F will increase like floor function, but it doesn't go upper like floor function by increasing the number of x by 1. This function will increase by increasing the number of x by stairs length (input of F). The function looks like the diagram on the next pages.



Definition. C is denoted for POA factor:

C will improve user chance to upload file based on user's Activity on blockchain (total size of user's uploaded file)

$$C = tanh(g(\alpha)x - \beta) + \gamma + 1$$

where α and β and γ are undecided dynamic constants that must be set to balance the plots based on the last uploading time and size.

The schematic of the function looks like below: