$$\mathrm{Succ}_1\left((v_1,d_1,T_1,F_1)\right)=\left\{(v_2,d_2,T_2,F_2)\in S:\ \substack{v_2\in\ \mathrm{Ord}\\ d_2=d_1-\ \mathrm{Dist}(v_1,v_2)\quad\wedge\quad d_1-\ \mathrm{Dist}(v_1,v_2)\geq 0\\ \exists i\in[k]:\quad i\in T_1\quad\wedge\quad T_2=T_1\setminus\{i\}\quad\wedge\quad F_2=F_1\cup\{i\}\\ \text{There exists a directed path } v_1\to\cdots\to v_2 \text{ on the map}}\right\}$$

$$\mathrm{Succ}_2\left((v_1,d_1,T_1,F_1)\right)=\left\{(v_2,d_2,T_2,F_2)\in S:\ \substack{v_2\in\ \mathrm{GasStations}\\ d_2=d_{\mathrm{refuel}}\quad\wedge\quad d_1-\ \mathrm{Dist}(v_1,v_2)\geq 0\\ T_1=T_2\quad\wedge\quad F_1=F_2\\ \text{There exists a directed path } v_1\to\cdots\to v_2 \text{ on the map}}\right\}$$

$$\mathrm{Succ}((v_1,d_1,T_1,F_1))=\mathrm{Succ}_1\left((v_1,d_1,T_1,F_1)\right)\ \cup\ \mathrm{Succ}_2\left((v_1,d_1,T_1,F_1)\right)$$

$$\forall x_i\in x^t:\quad \Pr\left(x_i\right)=\frac{\left(\frac{x_i}{\alpha}\right)^{-1/T}}{\sum_j\left(\frac{x_j}{\alpha}\right)^{-1/T}}=\frac{x_i^{-1/T}\cdot\alpha^{1/T}}{\sum_j\left(x_j^{-1/T}\cdot\alpha^{1/T}\right)}=\frac{x_i^{-1/T}\cdot\cancel{\alpha^{1/T}}}{\cancel{\alpha^{1/T}}\sum_j x_j^{-1/T}}=\frac{x_i^{-1/T}}{\sum_j x_j^{-1/T}}$$

First let us notice that the expression can be rewritten in the form

$$\forall x_i\in x:\quad \Pr\left(x_i\right)=\frac{x_i^{-1/T}}{\sum_{j\in[N]}x_j^{-1/T}}=\cdots=\frac{1}{1+\sum_{i\neq j}\left(\frac{x_i}{x_j}\right)^{1/T}}$$

And by taking the limit $T\to 0$, we have two options:

1. if $x_i<x_j$ for every $i\neq j$ then $\sum_{i\neq j}\left(\frac{x_i}{x_j}\right)^{1/T}\xrightarrow[T\to 0]{}0$ and $\lim_{T\to 0}\Pr\left(x_i\right)=\frac{1}{1+0}=1$. This is the case where $x_i=\min_j\left\{x_j\right\}_{j=1}^N=\alpha$.
2. if there exists at least one j such that $x_i\geq x_j$ then we get:
   (a) $\left(\frac{x_i}{x_j}\right)^{1/T}\xrightarrow[T\to 0]{}\infty$ if $x_i>x_j$, which leads to $\lim_{T\to 0}\Pr\left(x_i\right)=\infty$. This is the case where x_i is not the minimal element of $\left\{x_j\right\}_{j=1}^N$.
   (b) $\left(\frac{x_i}{x_j}\right)^{1/T}=(1)^{1/T}=1\xrightarrow[T\to 0]{}1$, if there is exactly one j that satisfies the equality $x_i=x_j$.
   (c) If there are $\left\{x_k\right\}_{k\in K}$ where $K\subseteq N$ and $2\leq|K|\leq|N|$ that satisfy $x_i=x_k$ for all $k\in K$, and all other coordinates satisfy $x_i<x_j$ (such that their summands vanish), we get $\lim_{T\to 0}\Pr\left(x_i\right)=\frac{1}{1+|K|\cdot 1+(0+\cdots+0)}=\frac{1}{1+K}$.

By using the equivalent expression of the probability function from question 21 and taking the limit $T\to\infty$ while assuming $x_j\neq 0$ for all j, we get

$$\lim_{T\to\infty}\Pr\left(x_i\right)=\lim_{T\to\infty}\frac{1}{1+\sum_{i\neq j}\left(\underbrace{\frac{x_i}{x_j}}_{\neq 0}\right)^{1/T}}=\frac{1}{1+\underbrace{(1+\cdots+1)}_{N-1\text{ times}}}=\frac{1}{N}$$

and since in our case $N=5$, we get that indeed the limit is 0.2, as can be seen in the plot.

$$h'\left(v\right)=\begin{cases}h\left(v\right) & \text{if } \mathrm{Applicable}_h\left(v\right)\ \text{ is true}\\ 0 & \text{if } \mathrm{Applicable}_h\left(v\right)\ \text{ is false}\wedge \mathrm{isGoal}\left(v\right)\ \text{ is true}\\ \min_{u\in\mathrm{Succ}(v)}\left(\mathrm{cost}\left(v,u\right)\right) & \end{cases}$$