

$$\begin{aligned}
 distPercent &= 1 - \prod_{i=1}^{numStations} (1 - station_i.rating) \\
 totalPercent &= \sum_{i=1}^{numStations} station_i.rating \\
 distribution_i &= totalDist \times \frac{distPercent \times station_i.rating}{totalPercent}
 \end{aligned}$$

Where:

numStations is the number of stations to which the industry may deliver cargo

station_i refers to the *i*th such station

station_i.rating is the rating, from 0 to 1, for the cargo in question

totalDist is the total amount of cargo to be distributed

distribution_i is the amount of cargo given to the *i*th station

Note that $distPercent \rightarrow 1$ as $numStations \rightarrow \infty$. This does not mean that it is acceptable to simply give *distPercent* the value 1, as this would cause *totalDist* cargo to be distributed if only one station is in range, regardless of that station's rating.

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alignl matrix{
alignr distPercent # "=" # 1-prod from i=1 to numStations left(1-station_i .rating) ##
alignr totalPercent # "=" # sum from i=1 to numStations station_i .rating ##
alignr distribution_i # "=" # totalDist times {distPercent times {station_i .rating} over {alignc
totalPercent} }
}NEWLINE
"Where:"NEWLINE
alignl numStations" is the number of stations to which the industry may deliver cargo"
newline
alignl station_i" refers to the "italic{"i"}"th such station" newline
alignl station_i .rating" is the rating, from 0 to 1, for the cargo in question" NEWline
alignl totalDist " is the total amount of cargo to be distributed" NEWLINE
alignl distribution_i" is the amount of cargo given to the "i" th station" newline newline
"Note that "distPercent %tendto 1" as " numStations %tendto infinity". This does not mean
that it is acceptable" newline
to simply give "distPercent" the value 1, as this would cause
"totalDist" cargo to be"newline
distributed if only one station is in range, regardless of that
station's rating."

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