1 How to interpolate

The function is linear for the speed > 1400.
Only speeds < 1400 are not 100% linear.

If we may use the linear interpolation, this is the way to do it:
1.1 Interpolate the speed

Define the function for the speed:

The speed is linear so the function of the form:

\[ y = mx + b \]

Where:
- \( m \) is the slope
- \( b \) is the y-intercept

1.1.1 Slope \( m \)

For lines like these, the slope is always defined as "the change in y over the change in x" or, in equation form:

\[
\frac{y_2 - y_1}{x_2 - x_1}
\]

To define \( m \), we have to define the 2 points on the speed line or:
\[ m = \frac{S_{y2} - S_{y1}}{S_{x2} - S_{x1}} \]

S_{x1} = 270
S_{x2} = 275

S_{y1} = \text{interpolation of speed between the Bottom-speed and the Top-speed = between } B_{y1} \text{ and } T_{y1}.
S_{y2} = \text{interpolation of speed between the Bottom-speed and the Top-speed = between } B_{y2} \text{ and } T_{y2}.

Linear proportion between speed and mass =

\[ \frac{\text{Speed} - B_{speed}}{T_{speed} - B_{speed}} = \frac{S_{y} - B_{y}}{T_{y} - B_{y}} \]

Where:

\[ S_{y} = \left[ \left( \frac{\text{Speed} - B_{speed}}{T_{speed} - B_{speed}} \right) \times (T_{y} - B_{y}) \right] + B_{y} \]

1.1.2 y-intersect
To define the intersection we use one of the known values for temp= 270 and 275 => Sy1 and Sy2

\[ b = y - mx = S_{y1} - m \times 270 \quad (or \quad = S_{y2} \quad m \times 275) \]

1.2 Find Mass
The mass to find is the intersection between:

\[ x = \text{temp} \]

and the found function of the speed line:

\[ y = mx + b \]