$$y = \log_{10}\left(\frac{\mathrm{EW}}{\lambda}\right)$$

$$x = \log_{10}\left[N\,f\,(\frac{\lambda}{5000\mathring{A}})\right]$$

$$\begin{aligned}
N(\mathrm{Na\ I}) &= N(3s) * \left(1 \;+\; \frac{N(3p)}{N(3s)} \;+\; \frac{N(4p)}{N(3s)} \;+\; \cdots\right) \\
&= 1.07 \times 10^{15}\,\mathrm{cm}^{-2}\,(1 \;+\; 0.05 \;+\; 0.0016) \\
&= 1.13 \times 10^{15}\,\mathrm{cm}^{-2}
\end{aligned}$$

$$\begin{aligned}
N(\mathrm{Na}) &= N(\mathrm{Na\ I}) * \left(1 \;+\; \frac{N(\mathrm{Na\ II})}{N(\mathrm{Na\ I})}\right) \\
&= 1.13 \times 10^{15}\,\mathrm{cm}^{-2}\left(1 \;+\; \frac{2400}{1}\right) \\
&= 2.7 \times 10^{18}\,\mathrm{cm}^{-2}
\end{aligned}$$

$$\frac{N(\mathrm{Na})}{N(\mathrm{H})} = \frac{2.7 \times 10^{18}}{6.59 \times 10^{23}} = 4.1 \times 10^{-6}$$

$$\text{elemental abundance} \equiv 12 \;+\; \log_{10}\left(\frac{N(\mathrm{Na})}{N(\mathrm{H})}\right)$$