

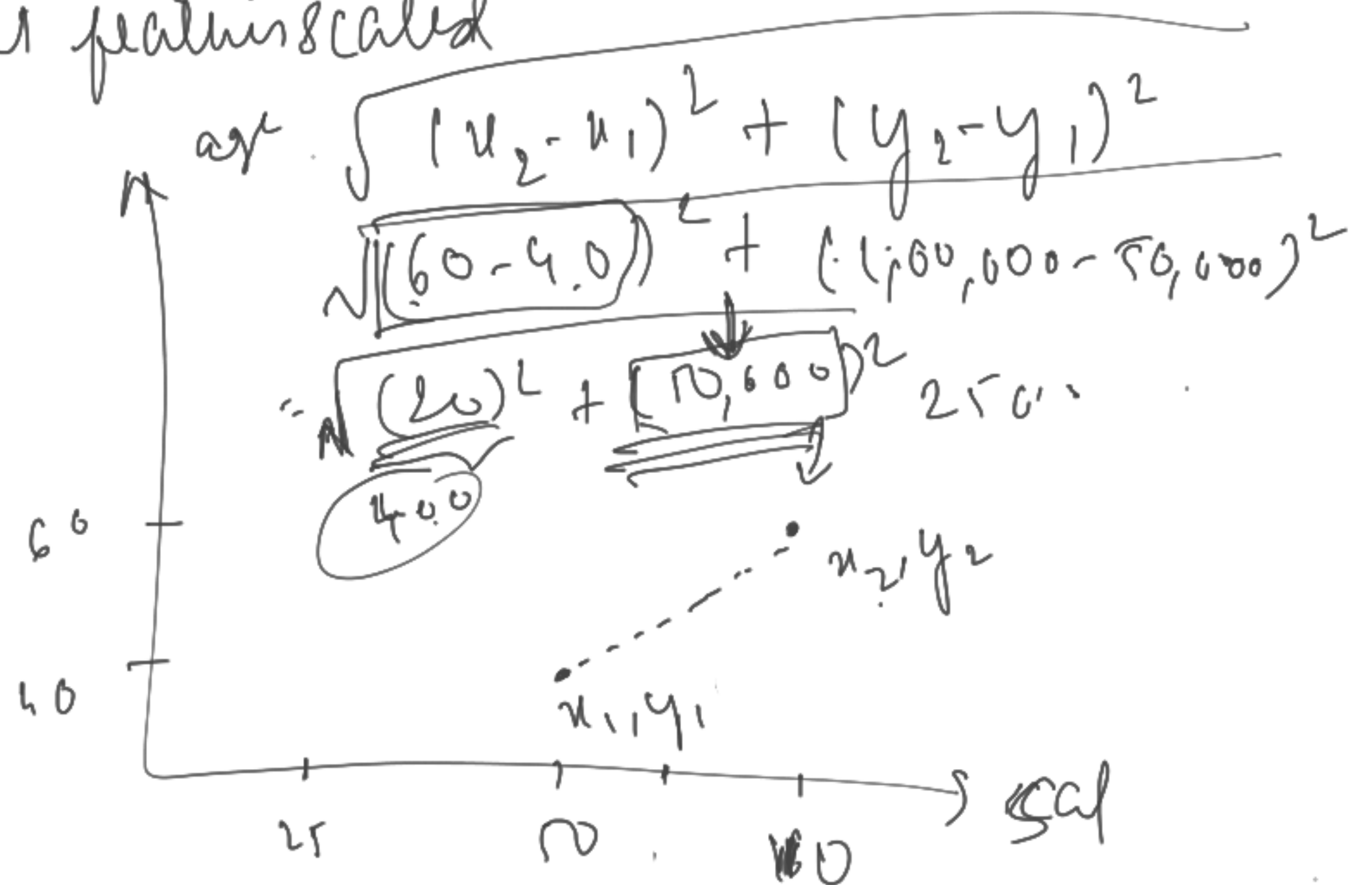
Feature Scaling

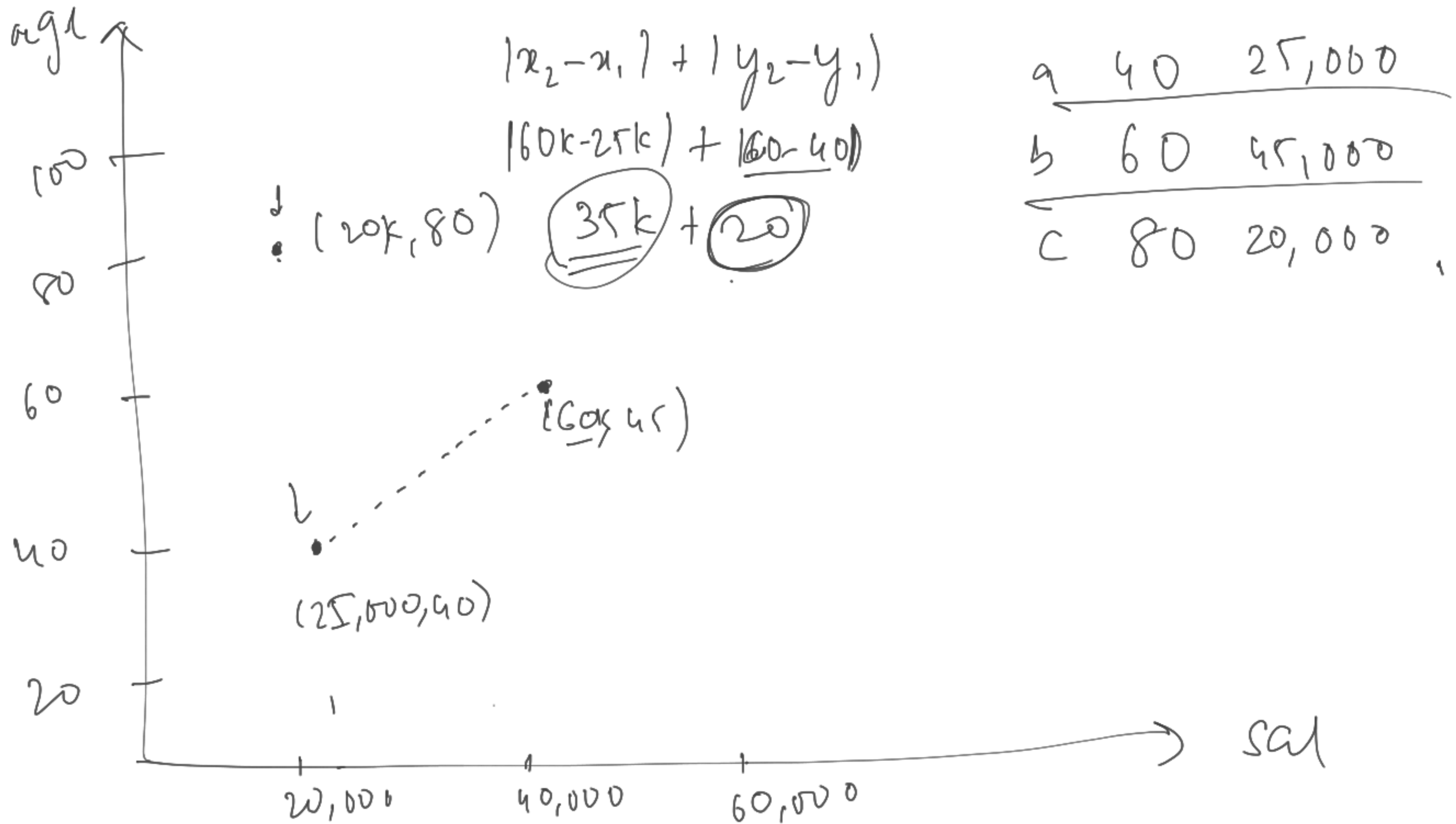
- finite range
- last step feature engg.
- only independent features scaled



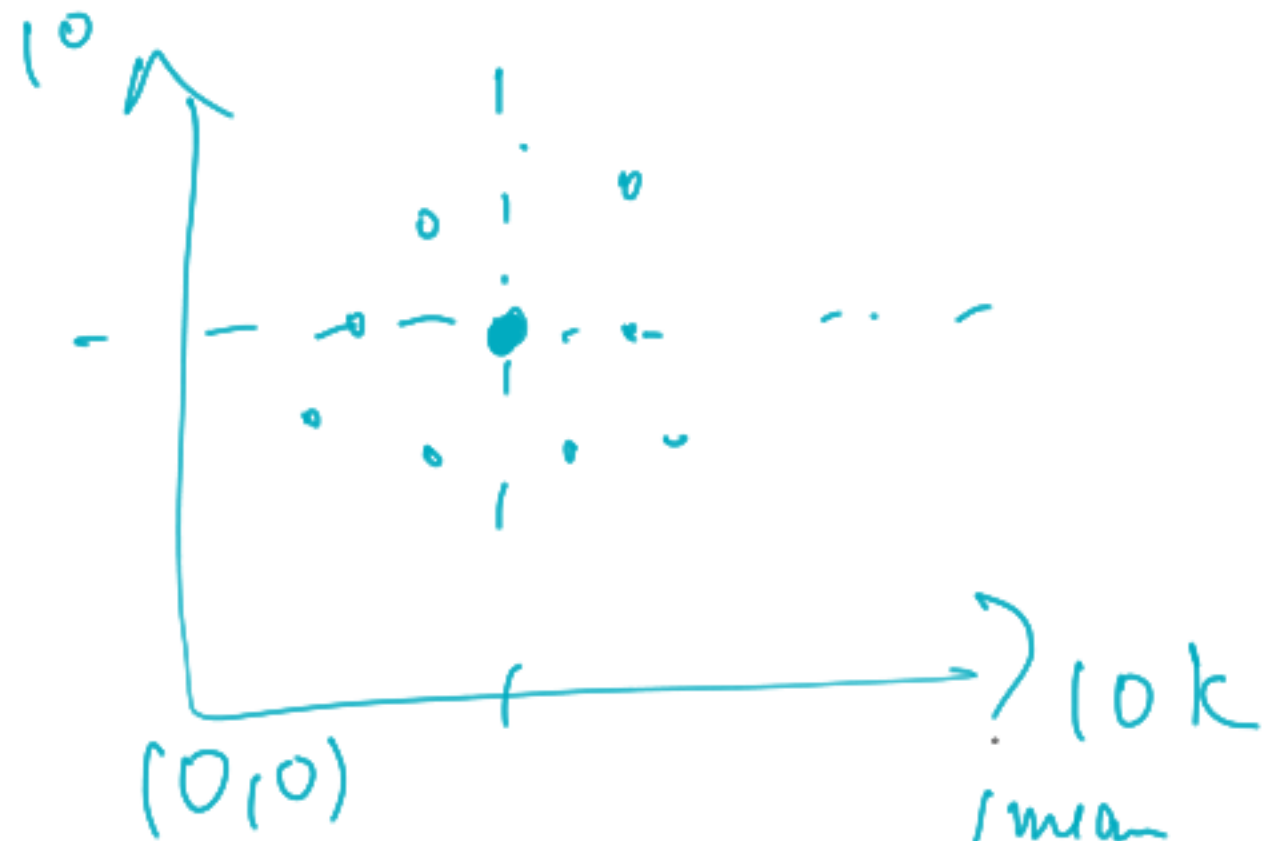
Need.

	age	sal
x_1, y_1	40	50,000
x_2, y_2	60	1,00,000
	38	25,000





✓ Standardization



$$X_i' = X_i - \bar{x}$$

↓ mean

$$S.D. = \sqrt{\frac{\sum |x_i - \bar{x}|^2}{n}}$$

← SD

✓ Normalization

$$\begin{matrix} x_1 \\ x_2 \\ \vdots \\ x_n \end{matrix}$$

$$\bar{x} = 19$$

$$\sigma = 6.7$$

age

$$10 \rightarrow -1.2$$

$$15$$

$$17$$

$$25$$

$$32$$

$$18$$

$$15$$

$$19$$

$$\text{mean} = 0$$

$$\sigma = 1$$

