

Code:(Inline Math Formula)

```
This formula  $f(x)=x_{1}^2+x_{2}^2$  is an inline formula
```

preview:

This formula $f(x) = x_1^2 + x_2^2$ is an inline formula

Code:(Fraction)

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$$f(x) = x^2 + \dfrac{1}{x}$$

```

preview:

$$f(x) = x^2 + \frac{1}{x}$$

Code:(Set)

```

$$D = \{(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)\}$$

```

preview:

$$D = \{(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)\}$$

Code:(Sum)

```

$$(w^*, b^*) = \arg \min_{w, b} \sum_{i=1}^n \left( y_i - wx_i - b \right)^2$$

```

preview:

$$(w^*, b^*) = \arg \min_{(w, b)} \sum_{i=1}^n (y_i - wx_i - b)^2$$

Code:(Matrix)

```


$$X = \begin{bmatrix}
x_{11} & x_{12} & \cdots & x_{1d} & 1 \\
x_{21} & x_{22} & \cdots & x_{2d} & 1 \\
\vdots & \vdots & \ddots & \vdots & \vdots \\
x_{n1} & x_{n2} & \cdots & x_{nd} & 1
\end{bmatrix}$$


```

preview:

$$X = \begin{bmatrix} x_{11} & x_{12} & \cdots & x_{1d} & 1 \\ x_{21} & x_{22} & \cdots & x_{2d} & 1 \\ \vdots & \vdots & \ddots & \vdots & \vdots \\ x_{n1} & x_{n2} & \cdots & x_{nd} & 1 \end{bmatrix}$$

Code:(Piecewise functions)

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$$y = \begin{cases} 0, & z < 0 \\ 0.5, & z = 0 \\ 1, & z > 0 \end{cases}$$


```

preview:

$$y = \begin{cases} 0, & z < 0 \\ 0.5, & z = 0 \\ 1, & z > 0 \end{cases}$$

Code:(Hat)

```


$$\text{Var}[\hat{f}(x)] = E[\hat{f}(x) - E[\hat{f}(x)]^2]$$


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preview:

$$\text{Var}[\hat{f}(x)] = E[\hat{f}(x) - E[\hat{f}(x)]^2]$$

Code:(Set Belong)

```


$$\rho = \frac{\sum_{x \in \hat{D}} w_x}{\sum_{x \in D} w_x}$$


```

preview:

$$\rho = \frac{\sum_{x \in \hat{D}} w_x}{\sum_{x \in D} w_x}$$

Code:(Arrow)

```


$$\lim_{m \rightarrow \infty} \left( 1 - \frac{1}{m} \right)^m \rightarrow \frac{1}{e}$$


```

preview:

$$\lim_{m \rightarrow \infty} \left(1 - \frac{1}{m} \right)^m \rightarrow \frac{1}{e}$$

Code:(Integrate)

```


$$\int_0^1 x^2 dx$$


```

preview:

$$\int_0^1 x^2 dx$$

Code:(Space)

```


$$f(x_i) = wx_i + b \quad \text{s.t.} \quad f(x_i) \approx y_i$$


```

preview:

$$f(x_i) = wx_i + b \quad \text{s.t.} \quad f(x_i) \approx y_i$$