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]

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

preview:

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

Code:[Set]

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

preview:

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

Code:[Sum]

```
$$
 (w^{*},b^{*})= arg  \ min_{\left( w,b\right)} \sum^{n}_{i=1}\left(y_{i}-
wx_{i} - b\right)^{2}
$$
```

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]

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

preview:

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

Code:[Hat]

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

preview:

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

Code:[Set Belong]

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

preview:

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

Code:[Arrow]

```
$$
\lim _{m\rightarrow \infty }\left( 1-\dfrac {1}{m}\right) ^{m}\rightarrow
\dfrac{1}{e}
$$
```

preview:

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

Code:[Integrate]

```
$$
\int_{0}^{1}x^{2}dx
$$
```

preview:

$$\int_{0}^{1}x^{2}dx$$

Code:[Space]

```
$$
f(x_i) = wx_i+b  \ \ \ \   s.t.  \   f(x_i) \approx y_i
$$
```

preview:

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