Display styled math puts math on display which is always centered.
While, inline or text styled math stays in line.

$$f(x) = (x+2)^2 - 9$$

Aligning multiple equations using align*

$$
\begin{aligned}
2x + 1 &= 9 & 3y - 2 &= -5 & -5z + 8 &= 3 \\
2x &= 8 & 3y &= -3 & -5z &= -5 \\
x &= 4 & y &= -1 & z &= -1
\end{aligned}
$$

$$
\begin{aligned}
f(x) &= a_2 x^2 + a_1 x + a_0 \\
&= x^2 + 4x - 5
\end{aligned}
$$

For inline, notice that by substitution we get the equation $f(x) = x^2 + 4x - 5$.
Also, notice that by substitution we get the equation $f(x) = x^2 + 4x - 5$.
The variable $x$. The letter x.
More differences in the math modes,
Display styled math,
$displaystyle \sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{pi^2}{6}$
For inline,
$textstyle \sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{pi^2}{6}$