Intro to Linear Programming

This is basically a file I am playing around with. Will eventually delete. I wonder why everything seems to be rendering just fine in this document but not on others even after I take off the problematic dollar sign. Here are the matrices styles for the Simplex Method section of the book. Shows how to color the elements in a matrix to illustrate the pivot element (row and column).

Here is the first one:

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$

And here is another one:

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$

Now I want to perform some operations and include aligned equations:

$$\begin{aligned} S &= \int_3^9 x^2 dx && (1) \\ &= \left[\frac{x^3}{3}\right]_3^9 && (2) \\ &= \frac{9^3}{3} - \frac{9^3}{3} && (3) \\ &= 234 && (4) \end{aligned}$$

$$Indicator\ Value = +7 - 5 + 3 - 9 \tag{5}$$
$$= -4 \tag{6}$$

$$Indicator\ Value = 1(12) - 1(1) + 1(3) - 1(5) \tag{7}$$
$$= 12 - 1 + 3 - 5 \tag{8}$$
$$= +9 \tag{9}$$

$$Indicator\ Value = +1 - 6 + 3 - 5$$
$$= -7$$

$$Rate\ of\ change = \frac{pop.\ in\ 2006\ - pop.\ in\ 2002}{2006 - 2002}$$

$$= 1100\ people\ per\ year$$
$$f(22) = 1100 \times 22 + 23,400$$

$$= 47,600$$