This is the 3rd assignment. My name is [yourname] and my student ID is [yourstudentid]

<u>About this document:</u>

1. This document uses the font size 10pt.

2. This document has a 1.2-inch margin all the way around.

Aside from $4 \times 4 = 16$, this is my favorite equation:

$$\text{Area of a triangle} = \frac{b \cdot h}{2}. \tag{1}$$

Mathematicians are often interested in this integral:

$$\int e^{x^2} \, dx.$$

This integral is actually *unsolvable.* Solving a system of linear equation is usually much easier.

$$2x + 3y - 6z = 4 \tag{2}$$
$$2y + 5z = -2 \tag{3}$$
$$x - y + 4z = 1. \tag{4}$$

This system can be written in a matrix form like this:

$$\begin{bmatrix} 2 & 3 & -6 & 4 \\ 0 & 2 & 5 & -2 \\ 1 & -1 & 4 & 1 \end{bmatrix}.$$

The last column in the previous matrix is special, and we can mark it off using the **array** environment. All of my columns are still center-aligned.

$$\left[\begin{array}{ccc|c} 2 & 3 & -6 & 4 \\ 0 & 2 & 5 & -2 \\ 1 & -1 & 4 & 1 \end{array} \right]$$

The following formulas are written in two columns. You'll notice that this bumps up against the bottom of this page. How did I do it [1]? I think the alignment here is beautiful, don't you? I put 1 inch between columns.

$$A = \pi r^2 \qquad\qquad B = \beta^2 \tag{5}$$
$$C = 2\pi r \qquad\qquad D = 4x \tag{6}$$

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[1] Hint: vfill

Here is a well-known formula:
$$\sum_{i=1}^{n} i = \frac{n(n+1)}{2}.$$

This formula is not as well known, but it is easy to verify:
$$\int_{0}^{10} x^2 \, dx = \frac{1000}{3}.$$

Finally, here is a simple matrix multiplication calculation:
$$\begin{bmatrix} 1 & 0 \\ 2 & 3 \end{bmatrix} \begin{bmatrix} 0 & 5 \\ -2 & 2 \end{bmatrix} = \begin{bmatrix} 0 & 5 \\ -6 & 16 \end{bmatrix}.$$