

## Joseph Howland FDEA Excellence in Developmental Education Scholarship

### My Progression and Growth Through the Application of Mathematics

I can recall at a very early age my fascination relative to numbers. This fascination that I had for numbers emerged when my parents introduced me to various ways of counting numbers. They provided me with some necessary tools such as arithmetic flash cards, a cash register, and various mathematics workbooks. They firmly believed in the importance of being able to read, write, and be proficient in all forms of mathematics; therefore, as a child I would constantly involve myself in all types of activities which included using different forms of numbers. As I grew older I realized that there were many

different forms of mathematics, which became a great challenge to me as I determined to master them all.

Having the ability to see the quantities of numbers increase and decrease was very challenging to me and prompted me to try and solve difficult math problems. The solving of those problems proved to be very rewarding and helped me realize the importance of being proficient in the field of mathematics. As I constantly and consistently pursued the mastery of more difficult forms of mathematics it allowed me to be more confident in all my studies. I realized that I may

be qualified to assist others that may need some assistance in this area.

I was fortunate to have a math teacher at Palm Beach Community College (PBCC) who believed in me and my ability to excel in mathematics. She nurtured me and encouraged me to be a mathematics teacher. Due to the fact that I excelled in her class and exemplified a level of proficiency she encouraged me to assist her as her supplementary instructor. I can truly say because of developmental math courses I have a positive spin on life.

~Minneka Veasey



**Minnika Veasey**  
Palm Beach  
Community College

The winner of this year's Howland Award is Minnika Veasey. Minnika is a student at Palm Beach Community College. In recommending her for the award, one of Minnika's professors noted that she "grasps concepts easily, is helpful to students around her, is diligent about homework, and does very well on tests – overall, she is a delightful student."

## The Developmental Math Scholarship Award

### The Skeleton Method

Most developmental math students would prefer not to work with fractions when solving equations. While the usual methods typically use another fraction to clear fractions from an equation, my prep algebra professor developed a method of using the least common denominator to clear fractions from an equation, allowing the student to avoid using fractions and reduce the chances of solving incorrectly. The method is called the "skeleton method" and can be exemplified by the example:

$$2x - \frac{1}{8} = \frac{8}{10} - 6x$$

First, you must setup your skeletons. Skeletons are simply empty parenthesis positioned *before* each term and *after* each operator. Also, be sure to place the skeletons above the fraction bar when rewriting fractions:

$$2x - \frac{1}{5} = \frac{8}{10} - 6x$$

Next, determine the least common denominator (LCD). In this example, the LCD of 5 and 10 is 10; enter this into the parenthesis:

$$(10)2x - \frac{10 \cdot 1}{5} = \frac{10 \cdot 8}{10} - 10 \cdot 6x$$

Now, multiply left-to-right using the LCD in your skeletons. To clear fractions, use the LCD to reduce the fraction to a whole number, then combine like terms:

$$20x - \frac{(10^2)}{5} = \frac{(10^1)8}{10} - 60x \rightarrow 20x - \frac{20}{1} = \frac{80}{1} - 60x \rightarrow 20x - 20 = 80 - 60x$$

The equation is now a simple linear equation containing only whole numbers. It can now be solved using the standard methods for solving a linear equation. To complete the process, move the variables and constants to either side using opposites; then combine like-terms.

$$20x - 20 + 20 = 80 + 20 - 60x \rightarrow 20x - 60x = 80 + 20 - 60x + 60x \rightarrow 20x + 60x = 80 + 20 \rightarrow 80x = 100 \rightarrow 80x = 100$$

Finally, solve for x by dividing by the coefficient and reducing any remaining fraction:

$$\frac{80x}{80} = \frac{100}{80} \rightarrow x = \frac{5}{4}$$



**Daniel Hill Jr.**  
Palm Beach  
Community College

In his application essay, Daniel presented a detailed narrative explaining how to use the skeleton method when solving equations with fractions. Daniel hopes to use his math skills one day in his work as an international trade specialist.