



## Five Math Concepts Every Student Should Know

By Wendy Lichtman

1. I want every student to know that when they're playing Black Jack, it's smart to hit on 16 and hold on 17. I want them to know this because, for starters, it offers an introduction to probability, but mostly I want them to know that math can be a pleasure. Sometimes when our students are studying math, I want them to hold their breath with anticipation. I want them to laugh.

2. I want every student to know what "time and a half" means. I want them to understand that, in many jobs, that's what they're entitled to if they work more than 40 hours a week. To make sure they get the right amount, I want them to be able to compute their regular pay (say \$12 an hour) by multiplying it by 1.5. I want them to be able to check their pay stub to make sure they get \$18 for each of those extra hours.

3. I want every student to be comfortable with mental math. I want them to know the multiplication tables as well as they know the words to a favorite song. I don't want them to have to think about what  $7 \times 8$  equals. I want them to hear the problem and know: 56. (I also want them to understand a whole list of concepts like fractions, percentage and decimals, but if they can multiply and divide in their heads, those tasks are way easier.)

4. I want our students to understand that there are unknowns, and that in math we usually represent them by the letter "x." That's what we're trying to find—the answer to the mystery which might go something like this: there's this unknown x, and if you multiply it by 3 you get 12; what's x? Also, x is a variable, which means it changes with every answer, so okay, try this one: you got a raise to \$13/ hour, so now what's the amount you deserve to get paid for your overtime?

5. Most of all, I want every student to know the social history of math: that in the past, we were taught to believe that entire cultures and one whole gender were not supposed to be good at math. I want our students to fight that stereotype; I want them to know that they are absolutely capable of learning, and loving, the subject.