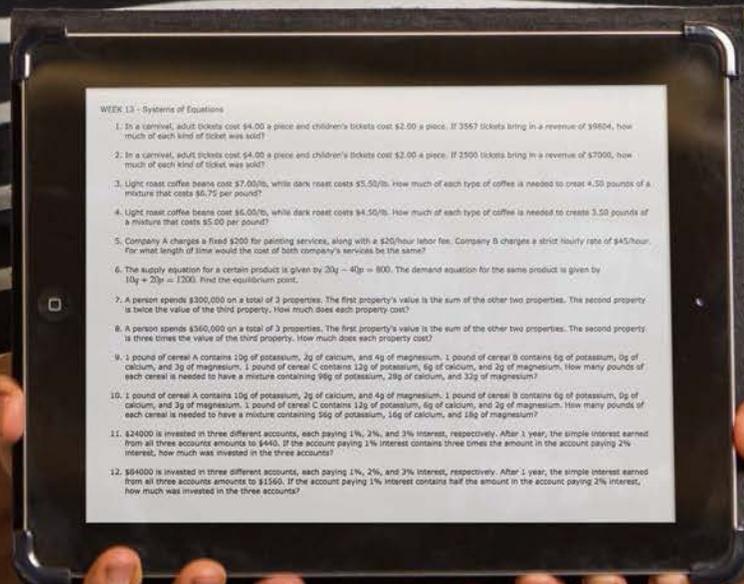


## Open/Alternative Textbook Initiative

# saves students millions of dollars



Natarajan says K-State algebra students appreciate the availability of a free, online textbook.

### WEEK 13 - Systems of Equations

1. In a carnival, adult tickets cost \$4.00 a piece and children's tickets cost \$2.00 a piece. If 3567 tickets bring in a revenue of \$9604, how much of each kind of ticket was sold?
2. In a carnival, adult tickets cost \$4.00 a piece and children's tickets cost \$2.00 a piece. If 2500 tickets bring in a revenue of \$7000, how much of each kind of ticket was sold?
3. Light roast coffee beans cost \$7.00/lb, while dark roast costs \$5.50/lb. How much of each type of coffee is needed to create 4.50 pounds of a mixture that costs \$6.75 per pound?
4. Light roast coffee beans cost \$6.00/lb, while dark roast costs \$4.50/lb. How much of each type of coffee is needed to create 3.50 pounds of a mixture that costs \$5.50 per pound?
5. Company A charges a fixed \$200 for painting services, along with a \$25/hour labor fee. Company B charges a strict hourly rate of \$45/hour. For what length of time would the cost of both company's services be the same?
6. The supply equation for a certain product is given by  $23q - 40p = 800$ . The demand equation for the same product is given by  $10q + 23p = 1200$ . Find the equilibrium point.
7. A person spends \$300,000 on a total of 3 properties. The first property's value is the sum of the other two properties. The second property is twice the value of the third property. How much does each property cost?
8. A person spends \$360,000 on a total of 3 properties. The first property's value is the sum of the other two properties. The second property is three times the value of the third property. How much does each property cost?
9. 1 pound of cereal A contains 10g of potassium, 3g of calcium, and 4g of magnesium. 1 pound of cereal B contains 6g of potassium, 0g of calcium, and 3g of magnesium. 1 pound of cereal C contains 12g of potassium, 6g of calcium, and 2g of magnesium. How many pounds of each cereal is needed to have a mixture containing 96g of potassium, 38g of calcium, and 32g of magnesium?
10. 1 pound of cereal A contains 10g of potassium, 2g of calcium, and 4g of magnesium. 1 pound of cereal B contains 6g of potassium, 0g of calcium, and 3g of magnesium. 1 pound of cereal C contains 12g of potassium, 6g of calcium, and 2g of magnesium. How many pounds of each cereal is needed to have a mixture containing 96g of potassium, 16g of calcium, and 18g of magnesium?
11. \$24000 is invested in three different accounts, each paying 1%, 2%, and 3% interest, respectively. After 1 year, the simple interest earned from all three accounts amounts to \$440. If the account paying 3% interest contains three times the amount in the account paying 2% interest, how much was invested in the three accounts?
12. \$64000 is invested in three different accounts, each paying 1%, 2%, and 3% interest, respectively. After 1 year, the simple interest earned from all three accounts amounts to \$1560. If the account paying 1% interest contains half the amount in the account paying 2% interest, how much was invested in the three accounts?

## Consider the numbers:

If Dr. Rekha Natarajan, college algebra coordinator, is responsible for teaching more than 1,600 students per year, and the textbook she assigns costs \$260, then collectively, they would spend \$416,000.

Alternately, Dr. Natarajan could receive \$5,000 and create an online textbook that she makes available for free.

Which scenario is best for K-State students and families?

Bonus question: What would happen to the price of a college education if this scenario were duplicated for students in intro to biology, human nutrition, technical writing and so on?

The answer lies in K-State's Open/Alternative Textbook Initiative.

Since 2013, this initiative has granted awards of \$2,000-\$5,000 to 45 faculty members who developed open or alternative textbooks for their courses. Instructors can adapt a pre-existing free, online resource (an open text) or elect to write their own materials, use library resources

or implement some combination (an alternative text).

The initiative was created when the student governing association allocated seed money from an existing fund created by university administrators. K-State Libraries provided additional financial backing, as well as administrative support.

**“THE SAVINGS PASSED ON TO STUDENTS IS MORE THAN TEN TIMES THE AMOUNT OF OUR INITIAL INVESTMENT.”**

— PROVOST APRIL MASON

Upon witnessing the financial impact of the program, the offices of the provost and president committed funds for two additional years.

“The savings passed on to students is more than ten times the amount of our initial investment,” said April Mason, provost and senior vice president. We look forward to the development of many more affordable—and even free—resources in our classrooms.”

This is just one of thousands of open access programs at universities around the globe in response to the

high cost of traditional publishing. They all share a desire to make research freely available.

“Libraries have always worked to get users access to the information and research they need,” said Lori Goetsch, dean of libraries. “If cost is a barrier to students participating in a college education, it’s a natural fit for a university’s library system to facilitate access.”

In 2015, the Open/Alternative Textbook Initiative received national attention thanks to “Open Textbooks: The Billion Dollar Solution,” a report released by the Student Public Interest Research Groups. They concluded that if every undergrad in the United States were assigned just one open-source textbook each year, students would save a billion dollars annually.

So what happens when a professor receives a stipend, creates an open textbook and reduces the students’ financial load?

At K-State, it’s a winning formula for everyone involved.

Visit [lib.k-state.edu/open-textbook](http://lib.k-state.edu/open-textbook) to learn more.

## What is an open textbook?

Open textbooks and materials are created with the intent that they will be freely used, adapted and distributed. They can be accessed online, downloaded for no cost or printed at low cost.



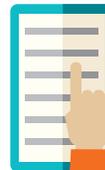
### SPRING 2013 - SPRING 2016 KANSAS STATE UNIVERSITY



**30+ courses**

have been or are in the process of being converted to open/alternative textbooks

More than  
**13,000  
K-STATE  
students  
benefit each  
year**



More than  
**\$1,670,000  
saved!**



Less than  
**\$150,000  
invested in  
the program**



**FACT:** Every year these textbooks are used in these courses, students will collectively save more than one million dollars. As the program grows, so will the savings.