REINVENTING EDUCATION

ANANT AGARWAL
EDX
The new classroom

Where is this?
EDX IS A NOT FOR PROFIT VENTURE OF HARVARD AND MIT

Open source Platform

Portal for learning edx.org

Harvard → HarvardX
MIT → MITx
Berkeley → BerkeleyX
Un → Unx
X university consortium

Pedagogy research using learning “big data”

Production support for high quality

*Harvard and MIT have committed $60M to the venture
To expand access to education for students worldwide through online learning, while reinventing campus education through blended models
Admitted: ~1600

Applied to MIT’s Class of 2015: ~18,000
Registered for 6.002x: Circuits and Electronics

Flipping the funnel

- Certified: 7,157
- Took the Final: 8,240
- Passed the Midterm: 9,318
- Made it to the Midterm: 10,547
- Tried the First Problem Set: 26,349

Same staff resources as 150 person on-campus class
Anatomy of an online class
Why did this (temp insensitivity) happen? Our next Aha!

Insight:

\[ V_0 = \frac{V_1 R_Y R}{2} \]

Suppose I perturb the circuit... (e.g. force \( V_0 \) momentarily to 12V somehow).
Autograded exercises

This problem investigates how resistors combine. Consider the three resistor networks shown below:

![Network A](network-a.png) ![Network B](network-b.png) ![Network C](network-c.png)

What is the equivalent resistance as an algebraic expression (in terms of $R$) of network A as viewed from its port?

What is the equivalent resistance as an algebraic expression (in terms of $R$) of network B as viewed from its port?

What is the equivalent resistance as an algebraic expression (in terms of $R$) of network C viewed from its port?
Autograded exercises

This problem investigates how resistors combine. Consider the three resistor networks shown below:

Network A

Network B

Network C

What is the equivalent resistance as an algebraic expression (in terms of R) of network A as viewed from its port?

What is the equivalent resistance as an algebraic expression (in terms of R) of network B as viewed from its port?

What is the equivalent resistance as an algebraic expression (in terms of R) of network C as viewed from its port?
Discussion forum

Welcome!

Welcome! I am from Brazil and I hope a great and exciting course. Let's go!

Post a response:
AI class from BerkeleyX
Great lectures were theater, but the future is in games
Instant feedback

This problem investigates how resistors combine. Consider the three resistor networks shown below:

- **Network A**
- **Network B**
- **Network C**

What is the equivalent resistance as an algebraic expression in terms of $R$ of Network A as viewed from its port?

What is the equivalent resistance as an algebraic expression (in terms of $R$) of network B as viewed from its port?

What is the equivalent resistance as an algebraic expression (in terms of $R$) of network as C viewed from its port?
An edX cult symbol?
Oh god; have I missed you... :~}
Virtual game-like laboratory
Much better: 63%

Same: 36%

6.002x was on the same level: 36%

6.002x was much worse: 1%

Much worse: 1%
“This course was the most rewarding experience of my life.”

-Student, Pakistan
Flipped class using edX at San Jose State University

Improving learning efficiency
Focus on efficiency not cost

Efficiency = \frac{\text{Quality}}{\text{Cost}}