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## Inaccessibility Simulator: Demo Mode

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# Inaccessibility Simulator

Demo Mode

*Michaela Stone*

## Abstract

This article is a text-based simulation of the experience of making sense of inaccessible online mathematics instructional content through the use of a screen reader. As such, it is most authentically experienced without explanation of content or conventions. It should be uncomfortable to read. It should be impossible to fully understand. It should require, but not support, significant effort to access the entirety of its content. An optional, explanatory postscript is included for readers who desire clarification.

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## 8

## Inaccessibility Simulator

let's learn some math

first pay dollar eighty six      sixty five for course access

now pay dollar eight hundred ninety five for j a w s screen reader software

if you do not have dollar eight hundred ninety five for j a w s screen reader software you can have it for free but you have to restart your entire computer every three pages to use it

install j a w s screen reader software and follow all accessibility setting instructions so that your homework questions will be left quote accessible right quote

begin your left quote accessible right quote homework

navigation region



next question button

question two november fourth eighty three is displayed

tab

main region

frame read only

question content area top left question content area top right question content area bottom enter your answer in the answer box

help on using the player previous question next question

tab

toolbar read only

tab

question content area top left

the target in the figure area shown to the right contains four squares if a dart thrown at random hits the target find the probability that it will land in a green region

a target contains four squares with the same center the side lengths for the squares are as follows colon three inches nine inches twelve inches fifteen inches the colors associated with regions on the target are as follows colon inside the smallest square green semicolon between the second smallest square and the smallest square blue semicolon between the second largest square and the second smallest square green semicolon between the largest square and the second largest square blue

the probability that a dart will land in a green region of the square target is edit period

left paren type an integer or a simplified fraction right paren enter your answer in the answer box

try to navigate to the answer box using your keyboard

enter your ans left parent type an in the target in the figure shown to the right contains four squares in a green region a target contains four squares with th tab

question content area bottom



tab

enter

type in text

enter

next question button

ask your roommate to use your mouse to click on the start of the problem so that you do not have to listen to all of the navigation information again

the table shows the outcome of car accidents in a certain state for a recent year by whether or not the driver wore a seat belt

table with four columns and four rows

wore seat belt no seat belt total driver survived four hundred and nineteen comma six hundred and eighty nine one hundred and sixty nine comma one hundred and sixty eight five hundred and eighty eight comma eight hundred and fifty seven driver died five hundred and twenty six nineteen seventy eight two thousand five hundred and four total four hundred and twenty comma two hundred and fifteen one hundred and seventy one comma one hundred and forty six five hundred and ninety one comma three hundred and sixty one

table end

find the probability of wearing a seat belt given that the driver survived a car accident

the probability as a decimal is edit period

left paren round to three decimal places as needed right paren the probability as a fraction is edit period

left paren type an integer or a simplified fraction right paren enter your answer in each of the answer boxes

help on using the player button

previous question button

next question button

unlabeled one button unavailable

if you did not understand that you can go back and read the problem again

don't get frustrated yet there are still twenty three more left quote accessible right quote questions to go

This is the part where I ask you if you're uncomfortable yet. Then I explain what's going on and in a moment of clarity you breathe a sigh of relief. No one could possibly expect you to learn anything from an inconsistently-formatted, virtually unnavigable cluster of unpunctuated, monospaced text. But I'm not going to spoon-feed you, because I told you it's "accessible", so it must be accessible. And if it isn't maybe you can get your roommate, or your mom, or some tutor who charges \$50 an hour to help you understand. Only 23 more "accessible" questions to go...this week. Next week's "accessible" homework is way easier, so there will be twice as many "accessible" problems to solve. That's enough coddling for now.

navigate to explanation of what the ████ is happening here

explanation content area top left

i'm going to help but i can't make it too easy that would be a disservice to the students with visual impairment who don't get an easy explanation for why their left quote accessible right quote homework isn't actually accessible

explanation content area top right

the first rule of understanding mymathlab through a screen reader is that nothing is ever consistent sometimes a period will be read out loud as left quote period right quote sometimes the screen reader will just pause for a little bit before starting the next sentence commas work the same way but the pause isn't quite as long ellipses which mean something very specific in a mathematical context might be read as left quote dot dot dot right quote or the reader might pause for longer than a period i'm guessing that you can figure out how quotation marks might work on your own by now just know that sometimes they're read out loud and sometimes there is just a pause before the quoted text brace yourself dot dot dot here comes a citation left paren bohman 2014 right paren navigating the screen works just like it does on every other website except when it doesn't some problems have lots of empty areas or hidden buttons that you have to navigate through to get to content sometimes you get stuck in an answer box and can't navigate your way out of it without someone who can use a mouse to help you graphics and tables might be decipherable but they probably aren't go ahead try to draw the image described in the first example problem if you get frustrated with that you can try to make the table from the second example problem here's a hint for the table colon you know how you sometimes put a comma between the thousands place and the hundreds place in a big number to make it easier to read well if the problem isn't formatted correctly the screen reader thinks that four hundred and nineteen thousand six hundred and eighty nine is four hundred and nineteen comma six hundred and eighty nine instead you know now that i think about it maybe the first rule of understanding mymathlab through a screen reader is that you can't understand mymathlab through a screen reader

facetious comment content area bottom left

five punctuation marks down a bunch more punctuation marks to go before we can start talking about mathematical equations just wait until we get to calculus image of winky face emoji

guilt trip content area bottom right

### INACCESSIBILITY SIMULATOR

You are currently using Inaccessibility Simulator in demo mode. Since you did not pay for Inaccessibility Simulator Pro, you have been limited to four pages of uninterrupted content. If you were using the free version of JAWS you would have been asked to restart your computer at this point. To ensure that Inaccessibility Simulator provides the most realistic simulation possible, please close all programs and restart your computer. Proceeding to the next page without restarting is inauthentic and would make me think somewhat less of you as a person.

More information and the option to purchase Inaccessibility Simulator Pro at our steeply discounted rate of \$894 is available on our nonexistent website.

OK

i bet you're thinking i can't possibly keep this up have you figured out how to make the audio files play so that you can compare the words you're reading to the ones you hear question if you're not using the right pdf viewer you might not even know the audio is there or maybe you're ready to give up on the whole thing because it's not worth the effort to try to understand did i mention that students with visual impairment who need to p a mymathlab course in order to get a college degree don't get to quit trying to understand question surely if they can do this for an entire semester left paren or two if they fail the first time right paren then you can tough this out for a few more pages

next section button

navigate to motivation for you to care and act

motivation content area top

please select the description that most closely matches your current role if more than one description matches your current role you'll have to figure out how to find the appropriate information if this was a mymathlab question pearson would tell you that essentially they do their best to the extent feasible to make selected questions and problems left quote accessible right quote but just between the two of us i think they couldn't be bothered to format the question correctly and they can only sleep at night by telling themselves that the vast majority of the people who read this won't need to choose more than one option

group start multiple choice

radio button not checked a i am an educator at a university that uses pearson's mylab products for online instruction and slash or assessment radio button not checked b i am an administrator at a university that uses pearson's mylab products for online instruction and slash or assessment radio button not checked c i am an educator or administrator at a university that does not use pearson's mylab products for online instruction and slash or assessment radio button not checked d i am a university student who is visually impaired radio button not checked e i am not an hole

click to select your answer then click check answer

check answer

educator at university pearson content area bottom right

wow dot dot dot we have so much in common i too am an educator at a university that uses mylab products since we're both in the same boat i feel like i can be completely open with you here there are a lot of upsides to mylab products no need to collect stacks of homework tests grade themselves my students can do all of the practice problems they want from the comfort of their dorm rooms and i don't have to so much as run off a single photo copy once i've handed out my syllabus every semester odds are you've never had a student with visual impairment in your cl es me either it's pretty rare and if you ever end up with a student with visual impairment in your cl no big deal i'm sure that in this day and age your department wouldn't choose to adopt online courseware that wasn't accessible it's so much of a no dash brainer that i bet you never thought it was worth reading what pearson has to say about the accessibility of their mylab products maybe though

just maybe you might want to take a quick peek at pearson's website just to double dash check that none of your department's decision makers missed something important while the pearson sales reps were plying them with all of the finest food and beverage that can be purchased within the boundaries of your state's ethics codes go ahead do a google search for left quote mylab accessibility right quote and look at the accessibility information and frequently asked questions pages i'll wait here while you give them a once over dot dot dot you're back exclaim notice anything question now i'm no expert in semantics but left quote working toward right quote left paren pearson education inc two thousand nineteen a right paren achieving standards and actually meeting those standards are two different things when you get to the frequently asked questions page left paren pearson education inc two thousand nineteen b right paren thing's get even more ominous words and phrases like left quote essentially right quote and left quote to the extent possible right quote sure seem to leave a lot of wiggle room for interpretation now there are a lot of other words on those pages so i might have missed something but i'm pretty sure i didn't see a single unambiguous claim that that mylab products meet reasonable practical or legal standards for accessibility you're probably thinking a couple of things right now one that's pretty ■■■ing shady on the part of pearson and two how did nobody at your university notice that pearson doesn't ever claim that their products are accessible question and i agree dot dot dot pearson is pretty ■■■ing shady i have a hard time believing that a company with as much at stake as pearson accidentally forgot to say they sold accessible products somewhere on their website as for the attention to detail of the decision makers at your university i want to believe that it was an honest mistake variants of the word accessible show up on those two pages dozens of times and pearson is definitely being as vague as they possibly can in their claims so we'll say it was oversight because it feels pretty icky to think that someone would intentionally ignore something that's so important hopefully by now we're on the same page regarding this being a problem but i still haven't told you why you should care you should care because even if it hasn't happened yet one day there will be a student with a visual impairment in your cl■■■ or on your campus or at another school that uses mylab courseware and if you knowing what you now know don't do something to deal with this situation that student is going to spend hours completing homework ■■■ignments that their peers finished in minutes they're going to fail tests because the problems were impossible to understand they're going to have to pay to retake a course they should have been successful in they might even drop out not because they can't handle the material but because it was easier to ignore the problem than to provide equitable access to an education in the field of study that you love seems like a pretty good reason to care to me and since you've been such a good sport about this i'll offer a little left quote unethical right quote life pro tip from one underpaid instructor to another colon call up your school's pearson rep from time to time to complain about something dot dot dot anything really loading times are too long a problem doesn't work like it should as long as you sound reasonably annoyed there's a pretty good chance they'll send you some kind of a gift card for a local restaurant to make up for the inconvenience they've caused you keep those in your desk for days when you forget to pack lunch or need an impromptu birthday present for someone in the department normally i wouldn't take advantage of something like that but i'm ok with occasionally ■■■ing over a company



whose entire business model relies on willfully disregarding the rights of an oppressed class of students

administrator at university pearson content area left

so you're an administrator cool cool i'm not an administrator myself dot dot dot yet so outside of what I learned grading papers for a grad class in ed leadership and what i read in the journal of higher ed i can't begin to understand the pressures you must face in your position if things are anything like i imagine then you're dealing with decreasing funding enrollment fluctuations pressure to modernize infrastructure and trying to keep everyone above and below you happy enough to keep things running smoothly from day to day maybe you have some say in whether or not your department adopts a product like pearson's mylab courseware maybe that's not what you do but you know someone who does navigate to the instructor at university pearson content area and read what i said there i think it's a pretty strong argument for why you should care about accessibility of the courseware you or your colleagues are adopting but i get that you have to come at this from a different angle as icky as it might make you feel at some point there is a financial bottom line you've read the research that shows adopting courseware like mylab results in average cost per student reduction of twenty percent left paren kozakowski two thousand nineteen p 160 right paren heck i even heard about this one school one time that saved seventy five percent left paren Williams nineteen ninety seven right paren but you know that mylab isn't accessible you know that pearson doesn't even claim it is since i've already made the ethical plea with the teachers let me make the legal one with you do a quick google search for left quote a d a louisiana tech right quote not too pretty is it question they're out over twenty grand just for the settlement not to mention legal costs costs to replace mylab courseware in their classes and the damage to their reputation for adopting inaccessible software and then unsuccessfully trying to plug the buck when a student complained left paren united states department of justice twenty thirteen right paren depending on what school you work for twenty grand give or take might be a drop in the bucket compared to the cost of restructuring courses that rely on mylab products i can understand the temptation to turn a blind eye to a problem that may not yet be an issue on your campus if that's the case i would encourage you to do another google search this time for left quote a d a higher education court cases right quote fifty schools got sued in december of last year alone left paren mckenzie twenty eighteen right paren whatever your motivation is for doing so keep sweeping accessibility under the rug and it is only a matter of time before your university is the one in the headlines or you do the right thing and talk to the right people and set the right wheels in motion so that it's your name at the top of the press release about your university's proactive initiative on equitable access to higher education

educator slash administrator at university no pearson content area top left

hi there and kudos to you for being at an institution that either ignored or set itself free from pearson's siren song hopefully your institution has done its due diligence in vetting the accessibility claims of whatever courseware it has adopted it couldn't hurt for you to check though read through the sections for teachers and administrators at pearson dash tainted schools i hope that within them you will find the motivation

**INACCESSIBILITY SIMULATOR**

You are currently using Inaccessibility Simulator in demo mode. Since you did not pay for Inaccessibility Simulator Pro, you have been limited to three pages of uninterrupted content. If you were using the free version of JAWS you would be asked to restart your computer at this point. To ensure that Inaccessibility Simulator provides the most realistic simulation possible, please close all programs and restart your computer. Proceeding to the next page without restarting is inauthentic and would make me think somewhat less of you as a person.

Proceeding to the next page after having skipped the last restart would be doubly inauthentic and would make me think dramatically less of you as a person.

needed to keep equity in educational access at the forefront of any efforts to adopt courseware for online or hybrid models of teaching if you are just beginning to consider online courseware you are in the perfect position to do things right from the beginning no need for lawsuits no need to rebuild courses from the ground up when a complaint arises because it won't arise if you are intentional about accessibility from day one

university student with visual impairment content area right

My sincerest apologies. Here I am trying to make a case for accessibility in education, and my method of choice is to create what might be one of the least accessible documents you've ever had the misfortune of running through a screen reader. Even if you're not using a screen reader, this abomination is going to be a chore to suffer through, no matter what accommodations you are or are not using. I suppose you're probably the last person on earth who needs to be told why they should care about accessibility in online courses. Hopefully whichever school you're attending is doing everything they should to make sure that you don't have to deal with the issues I have been evangelizing about. I have a sneaking suspicion, though, that things could be better. At this point, some people would be tempted to tell you to make sure you are advocating for yourself. Instead, I'm going to encourage you to take care of yourself. Your classmates are not expected to go to any great lengths to make sure they can do their homework every night. They don't have to fill out forms, jump through hoops, and still have to hope that nobody drops the ball so that they can take their exams. It's not fair to ask that you do any of those things either. However, if you are inclined towards activism, the great news is that there is a growing group of researchers interested in leveling the playing field with you. If that sounds like something of which you want to be a part, a great first step is going to Google Scholar and searching for the issue you are interested in along with the words "disability studies" or "emancipatory research". Within the articles, you'll find names and contact information for people who would very likely welcome your collaboration. You are an expert in accessibility and your contribution to accessibility research would be invaluable.

not an  hole content area top right

thanks for not being an  hole if you read through the previous sections i hope you'll find plenty of justification for caring about equity in education whether or not you work in a school you might not feel like you are in a position to effect change but you absolutely are see the final question for suggestions on how you can support equity and accessibility keep being awesome exclaim

navigate to final question

final question content area top

what else can i do question please select any options that you would like to pursue and at least one that makes you uncomfortable

group start multiple choice

check box not checked a talk about equity and accessibility with your family and friends check box not checked b do a google search for left quote be my eyes right quote and install the app check box not

checked c    inform yourself    check box not checked d    advocate for equity

click to select your answers then click check answer

talk with friends and family content area top left

good choice exclaim    the more people talk about it the less likely they are to ignore inequity when they see it

install be my eyes content area top right

great option exclaim    it is a way you can connect with and help someone who needs visual assistance    encourage your friends to do the same maybe you'll be connected to someone who needs assistance working around inaccessibility in mymathlab

inform yourself content area bottom left

nice thinking exclaim    i could give you a list of articles and papers to read    i could point you in the direction of news stories and court cases that are important    i could tell you to pay attention to specific legislators whose voting records you should follow    at the end of the day though    that's my list and reflects my thinking    i want you to come up with your own    the internet is a big place so you could start there maybe even sit down with a librarian and see what they have to offer    the one thing i want you to keep at the top of your mind while you are reading and researching is whose voice you are hearing    it's easier to survey teachers of students who are visually impaired than it is to survey students who are visually impaired, but who do you think knows more about the experiences of students who are visually impaired    if those aren't dominant voices    then you aren't getting the whole story

advocate for equity content area bottom right

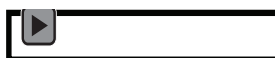
i love that initiative exclaim    speak up when you are aware of inequity write angry letters to politicians who ignore accessibility    write supportive letters to politicians who don't ignore it    heck    you could even tweet about it    you've got this exclaim

navigate to extra credit

extra credit content area bottom

just in case you think i have been exaggerating with my textual simulation of mymathlab's inaccessibility    i have embedded fully dash functional audio for you to hear    all audio was recorded on a computer running j a w s software with j a w s and mymathlab configured according to pearson's published specifications    below are three extra credit files    you should also try to play the two audio files at the beginning of the document if you haven't done so yet    in order to listen to them you will likely need to adjust settings on your computer and install additional software no instruction on how to best accomplish this will be offered

extra credit problem 1    extra credit problem 2    extra credit problem 3



### Postscript

This article is a text-based representation of the experience that students who rely on screen readers have with content that should be, but is not, accessible. Spacing is used in lieu of most punctuation to indicate the length of pauses in the reading of the content on the screen. Other punctuation is replaced by the spoken name of the symbol, again consistent with the way the material is read by the screen reader. There is no capitalization or typographic emphasis. Profanity is intentionally, algorithmically, and excessively censored. Anything that seems like a convention will probably be applied irregularly throughout the paper. The font is intentionally uncomfortably small, dense, and monospaced. Graphics that appear to be interactive are intended to be static. The text alternates between transcription of actual screen reader output of mathematics problems designated as accessible by Pearson and dialogue with readers. Audio files have been embedded in the PDF, however they require the installation of Adobe Acrobat and Adobe Flash in order to appear within the document and to function properly.

All of this is intended to frustrate the reader. Any clarity that you have received by reading this postscript is clarity that is not afforded to students who rely on screen readers to access content in MyMathLab.

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