

The background of the entire page is a collage of numerous clock faces of different sizes and styles, some with Roman numerals and others with simple dots. A large, light gray spiral graphic is centered behind the text.

The Aklua Times

~ Second Edition 2014 ~

“Tick of Time”

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(aka some jokes and math puzzles)	

Contact Us

As always, we appreciate any input from our members. If you have any ideas, complaints, or suggestions, don't hesitate to contact us via any of the following channels:

Ω E-Mail: aktua@up.ac.za

Ω Website: www.up.ac.za/aktua (Will be up and running again soon!)

Ω Facebook: <https://www.facebook.com/aktuaUP>

Letter from the Editor

(One last time)

“Closing time, open all the doors and let you out into the world...
Closing time, turn all of the lights on over every boy and every girl.”

Yes, it's a classic (read: cliché) song that every student should have heard and sang along to countless times during their varsity career... And for me, it's a suitable introduction to my last editor's letter for the Aktua Times at the end of my third year. This letter may be slightly more personal than the ones I've written before, so pardon the tear stains on page...

It's one part exciting, two parts terrifying to think that in less than a month I will (hopefully!) have a degree to my name. I've often said that I'm not ready for such a high level of responsibility... But then again, can anyone ever state without hesitation that they are? Looking back at the past three years, the only thing I can say for certain is that one will NEVER be completely certain when starting something new. You'll start out with many ambitious and extravagant dreams and ideas. Some will work out, many will not, but through it all, you'll meet “your” people, learn great things, and discover that life really is all about the journey.

I could go on and on, but I think I've used up my quota of clichés for this edition. I'd rather move on to thanking the Aktua Committee 2013/2014 for being the most amazing group of people I've could ever have asked to work with. You made the last year of my undergraduate career a memorable one, and I'm thankful know that Aktua's future is in good hands.

To all Aktua members: Best of luck for the exams ahead. Study hard, and may you all enjoy a blessed festive season with people close to your heart. Do crazy things, go new places, and enjoy every minute of it.

“Every new beginning comes from some other beginning's end...”



Ilse de Villiers

8th Annual Actuarial Careers Fair

Judging by the animated chatter and expectant atmosphere one could hear and feel all the way from the Aula grass, it was clear that the Annual Actuarial Careers Fair was going to be one of the best ones yet. High expectations did not yield disappointment! Upon arrival, we were greeted enthusiastically by the representatives from numerous companies that certainly went all out to impress us. With creative marketing innovations, every single one had the goal to convince us only their company could turn the 'dream job' - which we spend our entire undergraduate career envisioning - into a reality. To emphasise their point, there were many not-so-subtle attempts at bribery, - free slush puppies, space cases and stationary - which every student budget is always grateful for. Not to mention miniature Rubik's cubes that could make any mathematician's day!

On a more serious note, it was a superbly organised event with a great variety of companies present. The representatives were friendly and approachable, and ready to answer any questions. One of the most exciting things about this year's fair in particular is the exposure we received to new, young companies that many students had never heard of before.

As always, the event gave us insight into how our futures could turn out. Although quite intimidating, it's very encouraging to get a glimpse of the light at the end of the tunnel – to be reminded of why we put ourselves through all of this in the first place. Considering the rate at which the company representatives were snatching up the third year and honour students' CV's, there may be some hope left after all. Aktua would like to thank the Department for once again organising such a fine event, and for SA³ for their continuous involvement and support. We look forward seeing everyone again in 2015!



McKinsey & Co. Career Evening

Consulting... Where, what, how and why?

These are the questions that the team from McKinsey and Company set out to answer during the career exposure evening which took place on the 4th of September. To get started, we were presented with the company's core principles and values. These included: integrity, hard work, good customer service and many more.

As the evening progressed, the company's representatives gave us more information about their internship program, which is not only for actuarial science students but also for students in other degrees such as chemical or civil engineering. This internship program is aimed mainly at final year undergraduate students. Once an applicant has made it through the recruitment process, are recruited, they are given the opportunity to work for McKinsey and Company for three weeks as a business analyst. To make this opportunity even more appealing, each recruit is provided with a brand new laptop, a temporary car and hotel accommodation for the duration of their internship.

The final speaker for the evening was a civil engineering student who told the attendees more about her experience as a McKinsey intern. In short, she said it was the best three weeks of her life.

All in all, it was a very informative session, (with great food after!), and everyone who attended left the venue with yet another option added to the endless list of possible future careers as an actuarial graduate.

Shamiso Mawoyo

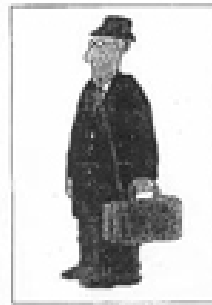
**EXPERIENCE THE RAW GUT-WRENCHING
DRAMA OF HUMAN CONFLICT THROUGH
ACTUARIAL CONSULTING**



Preparing to do battle



The thrill of victory



The agony of defeat

Outsurance: An Evening with the CEO

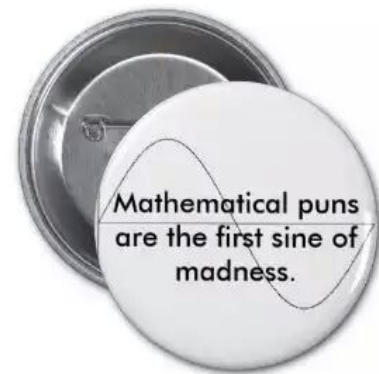
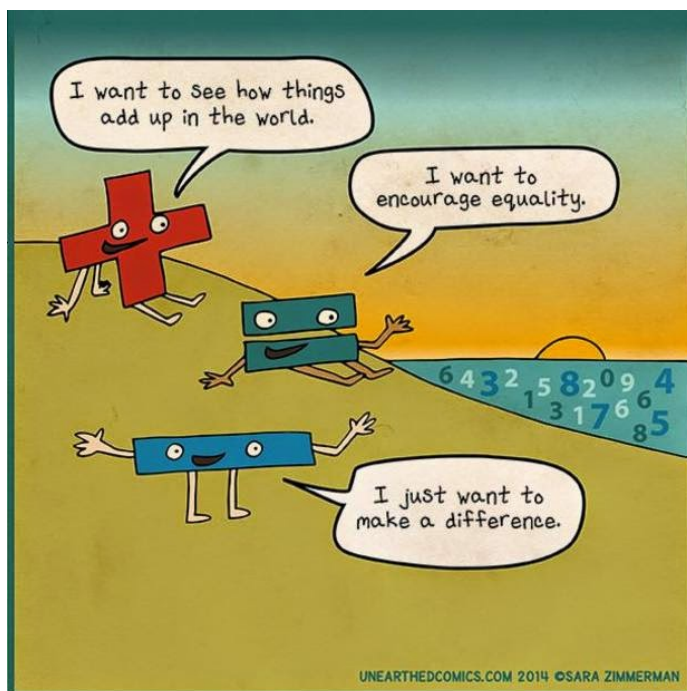
On the 11th of September, Aktua had the privilege of hosting Outsurance, probably the best known short-term insurer in South Africa, for a career evening. What made the evening extra special was the fact that the guest speaker was their CEO, Willem Roos, a Tuks Actuarial Science alumnus.

Outsurance takes a very technical approach when it comes to pricing products, so the central theme for the evening was the importance of data collection and analysis. Outsurance is one of the insurers currently considering telematics to help them collect data – an exciting development you can read more about in our research article. Mr. Roos also gave an overview of the main objectives of the company. These include providing innovative, high-quality, simplified insurance products directly to clients, and ensuring they deliver “AWESOME” service.

Finally, students were also entertained by some very comic videos about life in the Outsurance office. This really got the attention of the job hunting predators in the audience. The message about the culture at Outsurance is: “We take business very seriously, but we do not take ourselves too seriously.

Overall, a very successful night, and true to their philosophy, all the students got something OUT of the presentation.

Vivian Olivier



Research Article: The Effect of Technological Development on the Insurance Market

We live in a technological era that is advancing faster than we dare to imagine. There is a never-ending strive towards more - better apps, smarter phones, and not to mention the recent release of the Apple Watch. More and more devices are able to measure your fitness, where you drive, how long you are driving for, where you spend most of your time... Basically, these devices “measure your life”, and storing data that could be vital to your insurer.

An article by McKinsey & Company’s Richard Clarke and Ari Libarikian, as quoted by Saul Griffith in his article “Data Analytics Can Provide A Competitive Edge To Insurers”, describes a new trend in how insurers use data in their businesses:

“Gone are the days when insurers managed underwriting risk solely through actuarial data valuations, though these are still of crucial importance. Instead, advanced data analytics that rely on high technology computers and innovative sources of data now help insurers gain new insights into their business. Insurers are using innovations in mobile, social and cloud technologies, combined with advances in analytics software, to bring about process changes across their organization, including sales, marketing and service operations.”

Most of us have seen the Discovery “We insure good drivers” advertisement on television. Adrian Gore, the Discovery Limited Group’s Chief Executive Officer, spoke about their model of using client behaviour as a driving factor:

"Discovery's business model is a powerful asset as it enables a composite view of a client's risk behaviour, which can include their nutrition and exercise habits, as well as their driving behaviour. By rewarding better behaviour, the actuarial dynamics improve considerably, resulting in savings across the business. These resultant risk savings are channeled back to the incentives required to deliver the positive behaviour change that ultimately are of equal benefit to our client."

These behaviour-based models should lead to a positive impact on healthcare costs, life expectancy, and road safety. Let’s hope that more people will choose the healthier options and take the safer routes, which will lead to a more prosperous future for everyone.

Keyuri Naidoo

Lecturer Interviews

By Kelefilwe Kungwane

Dr. Reyno Seymore (First Year Economics)

Full name: Reyno Seymore
Date of Birth: 1979/09/24
Qualifications: DCom Economics
Position at UP: Senior lecturer



Where did you grow up and attend school?
The Capital (Jacaranda) City

Why did you decide to become a lecturer?
I liked students and student life and didn't want to leave campus.

What are the lowlights and highlights of your life thus far?
Lowlight – Accounting 110
Highlight – Passing Accounting 110

Do you have a motto that you live by?
Adapt or die

Do you have any hidden talents/interests you would like to share?
Then it wouldn't be hidden, would it?

Have you worked with actuaries before? If so, how did you find that experience?
Yes. Actuaries love to produce at Pareto efficiency.

If you could relive one specific day or time period of your life, what would it be and why?
Being an undergraduate student, because it is the best.

Any advice you can offer to students in our Department?
When your kids ask you one day “why are you so successful”, make sure you will be able to tell them “because I worked really hard/smart when it really mattered” (Take note, then you can have a life and be successful – it is not just about work/study).

Dr. Paul van Staden (Third Year Statistics - Time Series Analysis)

Details:

Full Name: Paul Jacobus van Staden
Date of Birth: 1976-07-07
Family: I am married to Mercedes. Depending on when you are reading this, our number of children is none or one.

Background:

Position: Lecturer in the Department of Statistics
Qualifications: PhD in Mathematical Statistics
Research Areas: Quantile-based distribution theory & Statistics in sport
University: Tukkies
High School: Hoërskool Staatspresident C.R. Swart

Questions:

How long have you been a lecturer at Tukkies?
Somewhere between 2 long and 14 years.

What type of music and movies do you enjoy?

I like listening to normal music such as Within Temptation, Tool, A Perfect Circle, Rammstein, Nine Inch Nails, Queens of the Stone Age, Apocalyptica, Nightwish, Laibach... And I like to watch normal movies like La piel que habito (The Skin I Live In), Nueve reinas (Nine Queens), Cidade de Deus (City of God), ¿Qué he hecho yo para merecer esto? (What Have I Done to Deserve This?), Todo sobre mi madre (All About My Mother), Diarios de motocicleta (The Motorcycle Diaries), Y tu mamá también (And Your Mother Too)... I also enjoy normal TV programs such as Haas Das, Oz and SpongeBob Squarepants. So clearly I am a normal lecturer.



What was the first word you said as a baby?

Steekproefkorrelatiekoefficiënt. That was what I meant when I said "r".

Do you have any pets? What are their names?

Two dogs: a Maltese called Rocío and a Yorkie called Julieta. My wife tells me the meaning of Rocío is dewdrop. I tried to verify this via Google, but I got stuck on a website of Rocío Guirao Diaz...

What did you do between lectures as a student?

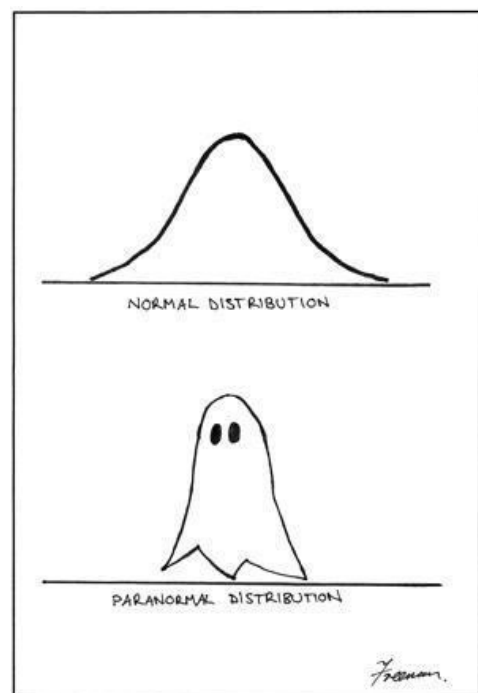
Well, when I was a student in the previous millennium, I also had class after class after class. And more often than not WST_{!!!} in the IT building was followed by WTW??? in the Maths building. So I usually had to do some running to be in time for my next class (especially when the WST_{!!!} lecturer "forgot" to stop lecturing 20 minutes past the hour). But sometimes, on the way to the Maths Building, I got distracted at the soft green grass in front of the Aula.

What was your favourite toy as a child?

Hansie die hanswors, a soft toy with a face that made my mother's friends scream with horror and shock. Later I became addicted to Lego.

If a movie was made about your life, who would play you and why?

Rocío Guirao Diaz. Oh sorry, I apologize. I thought you asked me "who would play with you" instead of "who would play you". Well, as long as Pedro Almodóvar is the director, I do not care who plays me. I guesstimate the soundtrack will include the song "Everybody Knows That You Are Insane" by Queens of the Stone Age...



Uit Agie se Magie / Through the eyes of a student

First year

As the end of the first year of a three-fold looming struggle (hopefully towards a better future) quickly draws near, we are about to write our final first year exams. For some of us, the idea of moving on almost seems rushed and irrational – we’ve only just started! To others, however, it should just happen already – we have been through far too much for this year to last any longer!

Reflecting on the whole year is a bittersweet experience. The many WTWs and WSTs that we have had to wrap our brains around - sometimes with tragic results - have left us with a somewhat scary taste of what to expect in the next two years of this three year “experience” – some might read: “ordeal”. Although we witnessed the usually packed lecture halls recede as the year went by, we certainly have learnt the true meaning of commitment, religious attendance of lectures, hard work, and dedication to a fight that is not for the feint hearted... Or for anyone who knows better than to convince themselves that they can pull off this actuarial science degree and it’s demanding precedence with ease. When all is said and done, though, one thing is for sure: it has been a noteworthy first year, and I am proud to acknowledge that most of us have stuck it through.

As the daunting doors of IAS and its 70% prerequisite for exemption, and the many statistics and calculus proofs are gape with impending expectation, may whichever force/spiritual beings/holy relics/good luck charms you turn to when the harsh reality of your current situation dawns upon you, be with all of you!

Shingie Muchenje

Second Year

Once upon a time, there was a beautiful verb called “sleep”. Sadly, this time ceased somewhere before the start of our second year. Between the (‘somewhat’ optional) early morning classes, continuous tutorial tests and at least one semester test a week, it’s a wonder any of us are still functional human beings. Who knew, at the start of the semester, that Analysis would be the reason for nightmares in the oh-so-rare times we do get to rest our eyes? Maybe I’m being a bit irrational, but let’s get real. We’ve all reached our limit with that subject (too much?)

To those of you who didn’t make it into the illustrious IAS 282, at least you’ve been able to go out on Thursdays without having a jam-packed 7:30 lecture on a Friday morning. A moment of silence for our brethren who have their tutorial on a Friday afternoon... Not to mention that the regret and disappointment we feel when the lecture starts and there are no attendance slips in stats.

The highlight of this semester probably had to be sitting in the ever encroaching darkness when the lights went out during WTW 264, trying to read your paper as if it were Braille. Never have I wished for night vision as much as I did in those 20 minutes!

The pot of gold at the end of our stressful rainbow is that, even for those of us who need another year, we’re halfway there. Time to tough it out and reap the rewards. Go study Actuarial Science they said... It will be fun, they said... Hang in there, guys, and good luck for the exams! May your caffeine addiction be easily defeated once it’s all over.

Danelle Jordaan

Third Year

“Only four more subjects? Pssshhh, piece of cake!”

Uhm, yeah, sure. Until the moment it dawns upon you that all four of these subjects are for some or other exemption... Suddenly, 24 hours in a day simply aren't enough for all the pre- and post tests, the SAS assignments, the scheduled-but-often-forgotten-until-the-last-minute class tests... Not to mention, somehow, finding a way to enjoy the last little bit of varsity life before we head out into the big, bad world. You would think by now we would've been able to balance everything a bit better... But, then again, I think we've established by now that we haven't exactly chosen a degree allowing us to be social butterflies...

After all is said and done, though, one fact remains: The end is in sight! Within a month, we will (hopefully) all be BSc (Actuarial and Financial Mathematics)-graduates, and the world will be our oyster. Some will join the scary “real world” of salaries and taxes, some will “join the dark side” and study towards a Honours degree in Statistics... And a last group will spend their eight hours a day studying CA1, trying to convince themselves they're still part of the Hatfield student life...

Whatever you decide to do – be proud of yourself for getting this far. You've gained experience, you've (almost) earned a degree, and most importantly – you have learnt how to price European put and call options in a non-arbitrage, continuously hedging world of finance which does not truly exist...

Just kidding! Best of luck to everyone for the last stretch. For the last little bit - Keep your friends close, but your ActEd notes closer. See you on the other side

Ilse de Villiers

Newsflash: South African Tertiary Maths Olympiad

On August the 12th, some students from the University of Pretoria participated in the SATMO, short for South African Tertiary Mathematics Olympiad. This is a Maths Competition which takes place annually across main tertiary institutions in the country. The scope of the written test ranges from Algebra to Integral and Differential Calculus to Topology to Combinatorics (if that's even a word) to name but a few.

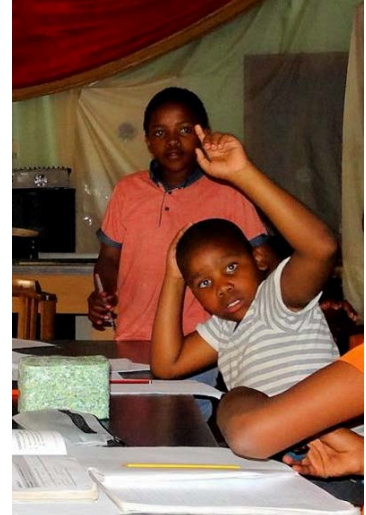
In 2014, a total of 238 students took this test, and four of our fellow B.Sc. Actuarial Mathematics students were ranked in the top 35 achievers nationally. The geniuses are Hannes Haasbroek, Yao-Chao Yang, Moseli Motsoehli and Chris Pelser. These guys made Tuks, and especially the Actuarial Department proud. Well done!

Kudzai Muzerengwa

Giving Back: New Life Tutors

Let's be honest - everyone always speaks about how they would love to help those who are less fortunate and do some charity work, but we never quite seem to be available when the time comes. Work, social plans and just life in general tends to get in the way. However, now you have another option.

From the second semester of 2014, Aktua has gotten involved with a group called New Life Tutors, a group of students who help out at an afterschool centre in Sunnyside. The centre is stationed at New Life City Church in Vlok Street, and every afternoon between 20 and 40 kids from primary schools in the area show up for help with their homework. With most of their parents working until late, the church provides a safe environment where they can work and ask for assistance should they require it.



I went one afternoon, and helping out these kids was truly worth putting my procrastination aside. We were helping young kids learn the very basics, and it feels like we're making a huge difference when they start correcting themselves and enjoying learning new things. It's simply amazing how eager they are to be taught – from learning their ABC's, to their times tables and colouring in, it's a blessing to put a smile on their faces.

Aktua will be helping out with this initiative again next year, and I urge anyone, everyone, to just take some time out of their days once every two or so weeks to help out. Skip that next series episode, reschedule a coffee date, or just get up off the couch and make a difference. It'll be worth it, trust me!

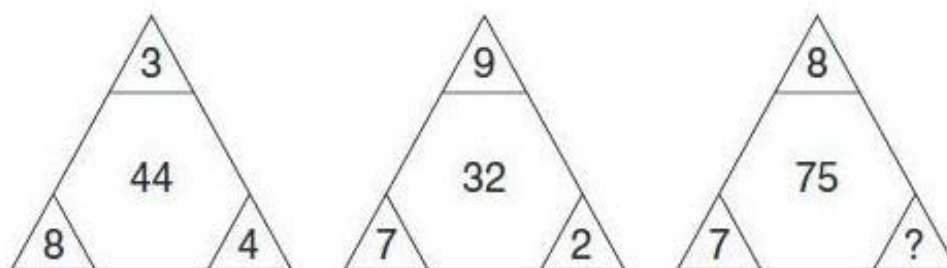
Danielle Mitchell



Procrastination 101

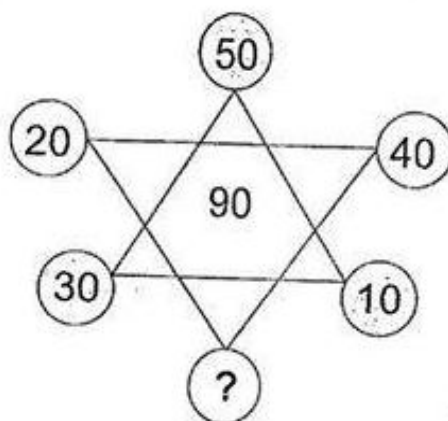
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	9		1				5	3
4						5		
			5		3		1	
		6			2			4

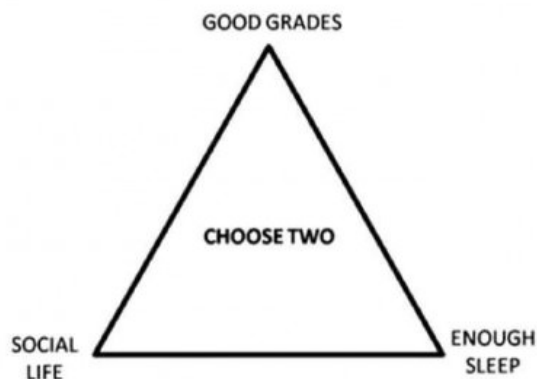


What number should replace the question mark?

34. Study the figure below. What is the missing number?



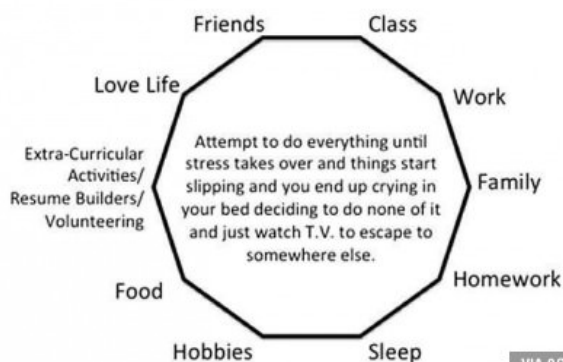
How People Think It Is:



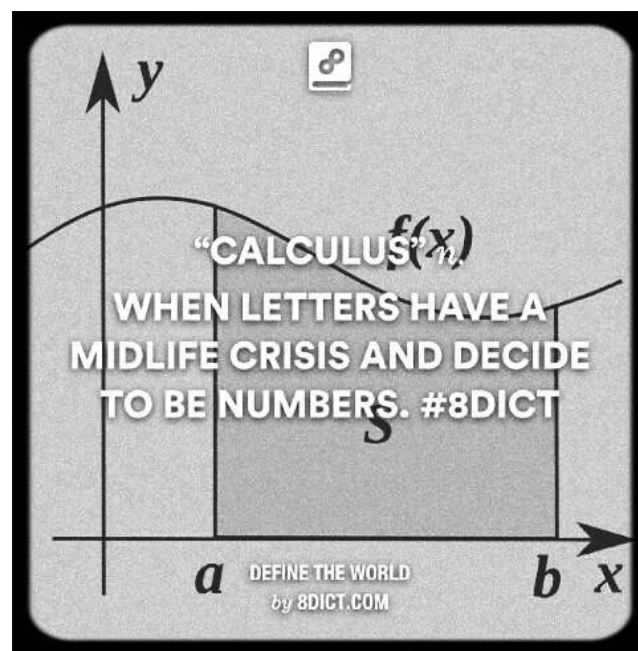
Grade	Grade Description
	Grade Outstanding
	Grade Outstanding
	Grade Outstanding
	Grade Outstanding
	Grade Outstanding
	Grade Outstanding



How It Really Is:



VIA 9GAG.COM



ALL YOU NEED IS

$$y = \frac{1}{x}$$



$$x^2 + y^2 = 9$$



$$y = |-2x|$$



$$x = -3|\sin y|$$



VIA 9GAG.COM

WHEN YOU FINISH YOUR EXAMS

