

[Professor Mickey Rosa is giving a lecture to his class when he asks a question]

Mikey: All right. Now, who can explain Newton's method and how you use it?

Student: Uh... you can use it to solve nonlinear equations.

Mikey: That's impressive. That's really good. I mean, I'm very impressed by that, especially since my class is called Nonlinear Equations. All right, now somebody tell me something I don't already know. Anyone? Bueller. Anyone? Bueller.

Ben: Newton stole it.

Mikey: I'm sorry?

Ben: Newton stole it. Joseph Raphson published this same method 50 years earlier. And if the start value is too far removed from true zero, then it fails.

Mikey: I'm sorry, what's your name?

Ben: Ben. Ben Campbell.

Mikey: Ben. So Ben Campbell suggests that Joseph Raphson was the original author of this method. Well, if that's the case, then why didn't he get any credit? Well, for one thing, Newton had a better publicist. And for another, after 1700, we know very little about Raphson other than the fact that he discovered the Kabbalah about 300 years before Madonna. All right, now, let's give Ben a chance for some extra credit, shall we? We're gonna call this the game show host problem, all right? Ben, suppose you're on a game show. And you are given a chance to choose from three different doors, all right? [*Referencing chalk board*] Now, behind one of the doors is a new car. Behind the other two, goats. Which door would you choose, Ben?

Ben: Um... Door number one?

Mikey: Door number one. Ben chooses door number one. All right, now, the game show host, who, by the way, knows what's behind all the other doors, decides to open another door. Let's say he chooses door number three. Behind which sits a goat. Now... Ben, game show host comes up to you. He says, "*Ben, do you want to stay with door number one or go with door number two?*" Now, is it in your interest to switch your choice?

Ben: Yeah.

Mikey: Well, wait. Remember, the host knows where the car is so how do you know he's not playing a trick on you? Trying to use reverse psychology to get you to pick a goat?

Ben: Well, I wouldn't really care. I mean, my answer's based on statistics. Based on variable change.

Mikey: Variable change? But he just asked you a simple question.

Ben: Yeah, which changed everything.

Mikey: Enlighten us.

Ben: Well, when I was originally asked to choose a door, I had a 33.3% chance of choosing right. But after he opens one of the doors and then re-offers me the choice, it's now 66.7% if I choose to switch. So, yeah, I'll take door number two, and thank you for that extra 33.3%.

Mikey: Exactly. People, remember, if you don't know which door to open, always account for variable change. Now, see, most people wouldn't take the switch out of paranoia, fear, emotions. But Mr. Campbell, he kept emotions aside

and let simple math get his ass into “*A Brand-New Car!*” Which is better than that goat you've been driving around campus. All right, everybody. That's the end of the day. Thank you very much. Your graded papers are down here at the end. You can pick them up on your way out.

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