

MOCK TRIAL OF B VERSUS A, OR SOLVING A PERSONAL EQUATION BY THE JUDICIAL PROCESS.

ADAPTED BY KATHRYN MCSORLEY, HUNTER COLLEGE, FROM
MR. STEPHEN LEACOCK'S STORY, "A, B, C."

CHARACTERS.

JUDGE. Man of few words. Speaks briefly and shows no unusual interest in the proceedings.

OFFICER OF COURT. Pompous, feels very important, repeats, demands of judge in ringing tones.

FIRST AND SECOND LAWYERS. Fussy but businesslike, each bound to win the case.

A. Very much alive, great interest in what is going on, with a tendency to bet with second lawyer whenever an opportunity presents itself. A full-blooded, blustering fellow of energetic temperament, hot-headed and strong-willed.

B. A quiet, easy-going fellow. Afraid of A and bullied by him, and quite in A's power having lost all his money in bets. He has gentle, tender thoughts of little C.

D. A tottering old man, inclined to be talkative and tell a great deal more than is asked. Completely at sea when second lawyer fires his volley of technical language, but when first lawyer shows his friendliness he is very eager to please him and tell all he knows.

COURT CLERK.

JURY. Plane Trigonometry, Arithmetic, Algebra, Plane Geometry, Solid Geometry, Spherical Geometry, Differential Calculus, Integral Calculus, Descriptive Geometry, Astronomy, Spherical Trigonometry, Analytics.

(Judge's stand and desk are up center of stage. Seats for the jury are placed left of the judge. Can put seats for newspaper reporters at right. In front of judge's stand is a table with books, documents, etc., for the attorneys and clerk. A witness stand and a prisoner's box, one right and one left. Court clerk sits at lawyer's desk ready to take notes.)

(Officer of the court bows in the judge.)

Officer—This way, your Honor!

Judge—That will do. *(Goes to desk.)* Go ahead and cry.

Officer—*(Shouts.)* Hear ye! Hear ye! The court is open, for his Honor is here.

(Enter on the right first lawyer—tall, lean, with books and papers. Collides with officer.)

First Lawyer—Beg pardon, I'm in a hurry. *(Goes to the table in front of judge's desk.)*

Officer—If I had bitten my tongue off that time, I'd give you a piece of my mind.

(Enter second lawyer—another fussy lawyer. Goes to table.)

Judge—*(Raps.)* Call in the jury from the juryroom.

Officer—*(Calls from list.)* Plane Trigonometry!

(Enter Plane Trigonometry.)

Judge—What is your occupation?

Plane Trigonometry—I am a dealer in triangular sines by profession, but largely famous for my tables.

Judge—So you make signs and tables for money?

Plane Trigonometry—No, your Honor, I make tables of sines for articles of torture in the hands of some instructors and for the annoyance of freshmen.

Judge—Go sit down among the jury. Call the next juror.

Officer—Arithmetic!

(Enter Arithmetic with example of galley method in evidence.)

Judge—Are you a married man?

Arithmetic—No, Judge, all these scratches come from an old habit of division I can't quite control.

Judge—You have been summoned to be a juror. Do you know the nature of an oath?

Arithmetic—I do, your Honor.

Judge—Give me an example.

Arithmetic—You beast, you dog, you algorismus cipher, you—

Judge—*(Raps.)* That is enough, go sit down among the jurors. Next juror.

Officer—The next calls himself Algebra.

(Enter Algebra.)

Judge—What is your occupation?

Algebra—I search the unknown and help solve the most perplexing problems for those who employ me.

Judge—Do you mean that you are a detective?

Algebra—Well, your Honor, I would not call it exactly that. By the same process of reasoning I would be a dentist, for I have the extraction of roots down to a science. But I *am* a person of Harmonical Proportions, vitally concerned in Progression.

Judge—All right. If the lawyers have no objection, sit down. Officer, hurry them along.

Officer—Geometry!

(Enter the three Geometries—Plane, Solid, and Spherical.)

Solid Geometry—We are three, your Honor, Plane. *(Introducing Plane Geometry.)*

Plane Geometry—I am wont to wander about in circles or go off on tangents, but I am usually on the square.

Solid Geometry—(*Introducing other companion.*) Spherical—and myself, a man of substance, a solid citizen—of no particular profession. In the realm of mathematics, however, we might be said to hold a place proportional to that of a conductor of a newspaper society column. We concern ourselves not only with the measurements of magnitudes, but with their various properties and relations as well. We are the personification of logic itself, and follow every hypothesis with a proof, the genuineness of which is established by the addition of my usual signature, Q. E. D., or that of my secretary, Q. E. F.

Judge—That will do. Take your seats among the jury.

Officer—That reminds me, your Honor, we have three jurors sworn in since yesterday. (*Calling.*) Descriptive Geometry, Differential and Integral Calculus. Take your places among the jury. (*These three enter and take seats.*)

Judge—Hurry them in.

Officer—Astronomy!

(*Enter Astronomy.*)

Judge—Have you a profession?

Astronomy—Before the war broke out, your Honor, I dwelt among Hunter students, and entertained them with stories of my travels along the cyclic path and tales of the heavenly bodies I met there. I described their appearances, determined their magnitudes, and explained the laws which governed their motion. But political conditions on this planet have disturbed my power to concentrate on the universe, so I am stopping at the Southern Cross, where I teach the Geography of the Heavens, and Methods of Tracing the Stars.

Judge—Sit down. Next juror.

Officer—Enter Spherical Trigonometry.

(*Enter Spherical Trigonometry.*)

Judge—What do you do?

Spherical Trigonometry—I am general assistant in the firm of Practical and Nautical Astronomy.

Judge—Sit among the jury. Next.

Officer—(*Shouts.*) Next!

Judge—Who are you?

Analytics—Your Honor, to be frank, I am appearing under an assumed name. I came into the world as Geometry, but in my youth I came under the dominion of Algebra. Her influence was

a good one. I grew in strength and finally reached such a state of independence that we considered it wise to assume a new name, Analytics, that my present status might be recognized. I am both *plane* and *solid*.

Judge—Sit among the jurors.

Officer—The jury is all here, your Honor.

Judge—(*Raps.*) Order in the court. The jury is sworn to render a verdict according to the evidence. Do you swear?

Jury—(*Shaking heads.*) Not aloud.

Judge—We are now ready for the trial.

First Lawyer—I represent the plaintiff.

Second Lawyer—And I appear for the defendant.

Judge—Call the plaintiff.

Officer—Let the plaintiff, B, enter.

(*Lead B and his friend D in to witness side of room.*)

Second Lawyer—Your Honor, my client is ready to proceed when you are.

Judge—Bring in A.

Officer—Bring in the defendant. (*Conduct A to chair on jury side of room.*)

Judge—Is this jury satisfactory?

First Lawyer—(*Confers with his client.*) It is to our side.

Second Lawyer—(*Same business.*) And satisfactory to us.

Judge—(*To jury.*) Gentlemen of the jury, you will render a verdict in the case of B versus A, the defendant, whom he charges with the death of C, their partner, and sues for a share of A's profits in accordance with the law of Arithmetical Progression.

First Lawyer—May it please your Honor, and gentlemen and ladies of the jury, I present my case to you. The men involved are not unknown to you. You have followed their history through countless pages of problems. It is a long time since you were told, "A, B, and C can do a certain piece of work. A can do as much in one hour as B in two, or C in four. Find how long they work at it." Or thus, "A, B, and C are employed to dig a ditch. A can dig as much in one hour as B can dig in two, and B can dig twice as fast as C. Find how long, etc., etc." Or after this wise, "A lays a wager that he can walk faster than B or C. A can walk half as fast again as B, and C is only an indifferent walker. Find how far, and so forth."

The occupations of these men are many and varied. In the older arithmetics, they contented themselves with doing a

"certain piece of work." This statement of the case, however, was found too sly and mysterious, or possibly lacking in romantic charm. It became the fashion to define the job more clearly and they set themselves at walking matches, ditch-digging, regattas, and piling cord wood. At times they became commercial and entered into partnership, having with their old mystery a "certain" capital. Above all they reveled in motion. A rides on horseback, or borrows a bicycle and competes with his weaker associates on foot. They have raced on locomotives, they have rowed, or again they have become historical and engaged stage-coaches, or at times become aquatic and swam. If their occupation was actual work, they preferred to pump water into cisterns, two of which leak through holes in the bottom and one of which is water-tight. A, of course, had the good one. He always took the bicycle and the best locomotive, and the right of swimming with the current.

Whatever they did, they put money on it, being all three sports. And A always won.

You will notice A is a blustering fellow, hot-headed and strong-willed. It was he who proposed everything, challenged B to work, made the bets, and bent the others to his will. He is a man of great physical strength and phenomenal endurance. He has been known to walk forty-eight hours at a stretch and to pump ninety-six. He has bullied B and C, kept them in his power, having won all their money in bets. He enslaved them and ruined their health. He finally exterminated C with his endless betting and gambling. He drove the others, whose spirits were willing but whose flesh was weak.

May the law of Arithmetical Progression descend upon his head!

Let B, the plaintiff, take the stand.

B—Oh, dear, don't let him (*Gestures to A.*) start me piling up those papers or (*Hesitates.*) measuring the density of their heads. (*Reassured by lawyer, goes to stand.*)

Judge—The evidence you will give in this case will be the truth, or as much of it as you can tell?

B—(*furtive glance at A.*) Yes, your Honor.

Judge—What is your name?

B—B, sir.

Judge—Are you married?

B—Not now, sir. She died of worry, sir.

Judge—What is your age?

B—As well as I can remember, we were invented by some mathematicians, 1000 B. C.

First Lawyer—(*Encouragingly.*) Tell your simple story of wrong and suffering to the jury. Tell them how you and C were inflicted by the heartless wretch seated there.

B—I'll try—but—I have no heart for work and he is sure to start something. (*Looks on the verge of tears.*)

A—(*To second lawyer.*) I bet if he begins to cry, I can make twice as much noise as he can.

First Lawyer—(*Jumps up.*) Listen to him, your Honor, the gambler is betting again. After he has wheedled all he could from my client and the deceased C, including the life of the latter, he turns to the prolific source at his side. (*To B.*) Go on with your story.

B—It all began, that is, the end began one evening after a regatta. We had been rowing in it and it transpired that A could row as much in one hour as I could in two, or C in four. C and I came in fagged out and C was coughing badly. "Never mind, old fellow," I said to him. "I'll fix you up on the sofa and get you some hot tea." But A came blustering in and said, "I say, you fellows, Hamlin Smith has shown me three cisterns in his garden and said we can pump till tomorrow night. I bet I can beat you both. Come on. You can pump in your rowing things, you know. Your cistern leaks a little, I think, C." I said it was a shame, that C was used up now, but we went; and—(*Sigh.*) soon anyone could tell from the sound of the water that A was pumping four times as fast as C.

We never got any time to eat or sleep, and soon we couldn't keep at our accustomed tasks. Work in that line is now done by M, N, and O, and some people are now employing for algebraical jobs four foreigners called Alpha, Beta, Gamma, and Delta.

Poor C was an undersized, frail thing with a plaintive face. Constant walking, digging, and pumping had broken his health and ruined his nervous system. His joyless life had driven him to smoke more than was good for him. And his hand often shook as he dug ditches. He had not the strength to work as A and I did; in fact, as Hamlin Smith said, "A could do more work in one hour than C in four." But he wouldn't listen to me. But I can't go on (*Sob.*), it was all too heartless. (*Jury and officer all start into tears and sobs.*)

First Lawyer—Your Honor, and gentlemen and ladies of the

jury! This is the most heartless case of overwork within school doors that it has ever been my fate to hear of or be interested in. There is no money on earth or no punishment that can heal my client's bruised heart or atone for his loss in the person of little C for whom he always had a gentle, brotherly feeling. We seek some balm for this shattered heart—the arithmetical sum of a series of 500 terms beginning with 3 when the difference is 7—a mere bagatelle. That will not return one-half of my client's lost manhood and assertiveness. Yet we will take it—take it as a lesson to future mathematicians (*Gestures to audience.*) tempted to overwork those in their power. I ask you to shed tears for my client if you have any to shed. If you have none, think of the deceased. He (*Indicates B.*) has told you the solemn truth in all its harrowing details. To further substantiate the truth spoken by him, I call to the witness stand D, at one time affiliated in this partnership. (*D comes to stand.*) He will corroborate all the details so reluctantly given by B, my client.

(*Court clerk takes big book to D at the witness stand.*)

Clerk—Do you swear to tell the truth, the whole truth, and nothing but the truth?

D—Yes, sir.

Clerk—Put your hand on the book and say, "I do so swear."

D—(*Very awed, places hand on book.*) I do so swear.

(*Clerk returns to take notes.*)

Judge—What is your occupation?

D—I just scratch about in the garden, sir, and grow a bit of logarithm or raise a common denominator or two. But Mr. Euclid he use me still for them propositions, he do.

Judge—Do you realize the nature of an oath?

D—I've heard my father use them.

Second Lawyer—(*Arises.*) Your Honor, and gentlemen and ladies of the jury. I represent the much-maligned person A, alias John of "John, William, and Henry," alias x of " x , y , and z ," my client. First I will cross-examine the witness. Do you know the defendant?

D—Do I know 'em, sir? Why, I knowed 'em all ever since they was little fellows in brackets. Master A, he were a fine lad, sir. Though I always said, "Give me Master B for kind-heartedness like." Many's the job as we've been on together, sir. Though I never did no racing or aught of that, but just the plain labor, as you might say.

Second Lawyer—(*quickly, with an aim at bewildering D.*)

Do you know any of the details leading up to this most infamous attempt at blackmail, coercion, and vilification?

D—(*Not comprehending.*) N-n-no, sir.

Second Lawyer—Has the plaintiff ever told you of the prospects he would have in case he sued said defendant in this court of appellate jurisprudence and legal acumen?

D—(*Still not understanding.*) N-n-no, sir.

Second Lawyer—Did you behold said manslaughter coming under the head of fatigé corpus, Sec. 2, pg. 45, state laws of jurisprudence, Littleton or Coke?

D—N-n-no, sir.

Second Lawyer—Nor would the actual occurrence, having taken place homicidal or technical, with malice or forethought, create a desire for his perpetual incarceration?

D—No, sir.

Second Lawyer—Your Honor, their star witness is on the stand. (*Mimic.*) Yes, sir; no, sir; no, sir. Gentlemen and ladies of the jury, is this evidence in a court of law? A child could have fathomed my legal phrases and meaning. (*To D.*) Did you comprehend the significance of my interpellations

D—(*With the same bewildered look.*) N-n-no, sir.

Second Lawyer—Do you speak French?

D—No, sir.

Second Lawyer—Do you speak German?

D—No, sir.

Second Lawyer—Do you speak Spanish?

D—No sir.

Second Lawyer—Do you speak Italian?

D—No, sir.

Second Lawyer—Do you speak Hindoo?

D—No, sir.

Second Lawyer—(*To jury.*) You will observe that I have addressed him in seven different languages and he can't understand one. (*To D.*) That is all. You may come down.

First Lawyer—(*Interrupts.*) Your Honor, I would like to question this witness.

Judge—Let this proof be brief and to the point.

First Lawyer—Were you not present at the melancholy end of your former acquaintance, C?

D—(*Face clearing up as he understands.*) Yes sir.

First Lawyer—Tell what you know.

D—Well, sir, A and B had been rowing on the river for a wager

and C had been running on the bank and then sat in a draught. Of course the bank refused the draught and C was taken ill. A and B came home.

First Lawyer—(*Interrupts.*) And found C lying helpless in bed?

D—Yes, sir.

First Lawyer—(*Questioning.*) A shook him roughly and said, "Get up, C, we are going to pile wood." C looked so worn and pitiful that B said, "Look here, A, I won't stand this. He isn't fit to pile wood tonight." Is this so?

D—Yes, sir, and C smiled weak like and said, "Perhaps I could pile a little if I sat up in bed."

First Lawyer—(*As a question.*) Then B, thoroughly alarmed, said, "See here, A, I'm going to fetch a doctor; he's dying"?

D—(*Humbly.*) Yes, sir, and A got mad, sir, and said they had no money to fetch a doctor.

First Lawyer—What did B do then?

D—He said, "I'll get a doctor. I'll reduce him to his lowest terms. That will fetch him."

First Lawyer—Yes, and then?

D—Well, sir, C's life might have been saved even then if it hadn't been for a mistake about the medicine. It stood at the head of the bed on a bracket, and the nurse accidentally removed it from the bracket without changing the sign.

After that blunder C sank rapidly. On the evening of the next day (*Melancholy.*) as the shadows deepened in the little room, it was clear to all that the end was near. I think even A was affected at the last as he stood with bowed head aimlessly offering to bet with the doctor on C's labored breathing. "A," whispered C, "I think I'm going fast." "How fast do you think you'll go, old man?" murmured A. "I don't know," said C, "but I'm going at any rate."

The end came soon after that. As his soul sped heavenward, A watched its flight with melancholy admiration, and B (*Sniffling.*) burst into a flood of tears. (*Sobs.*) We put away his little cistern and the rowing togs he used to wear and we, B and I, sir, we feel as if we could hardly ever dig again. (*Crying—deep sob.*)

(*Judge raps for order.*)

First Lawyer—That will do. Calm yourself. You may come down.

Second Lawyer—(*Jumping up.*) Oh, your Honor, and—I

came near forgetting—ladies and gentlemen of the jury, I want you to look in the face of my client. His life has been arduous and full of peril. A mistake in the working of a sum might keep him digging a fortnight without sleep. A repeating decimal in the answer might kill him, yet he was not deterred. He went right on betting and supplying arithmetics and algebras with page after page of problems. Now you will have a chance of showing your gratitude. Is he to be held accountable if C's strength was in inverse proportion to his own? Because he is a full-blooded, energetic fellow with much initiative, do you think he is without a heart, without emotions? Ah, you forget his panting sides as he pumped water four times as fast as C. You forget his eager counting of the last exhalations of the dying C. Did he not admit himself baffled by the rate and direction of the flight of C's soul? I have here a vector diagram of that same occurrence which he constantly carries with him to have for reference when his own soul flees. He is still confident that his soul will overtake C's before the former comes to rest. Did he not attend that little funeral so plain and unostentatious? Is this acting as a murderer? No! (*Ringling tone.*) but as a true sporting man and mathematician he engaged two hearses, one for himself and one for B. Both vehicles started at the same time, B driving the one which bore the sable parallelepiped containing the last remains of his ill-fated friend. A, on the box of the empty hearse, generously consented to a handicap of 100 yards, but arrived first at the cemetery by driving four times as fast as B.

As the sarcophagus was lowered, the grave was surrounded by the broken figures of the first book of Euclid.

It may be noticed that A has become a changed man, has lost interest in racing, and digs but languidly. He has given up work and settled down to live on the interest of his bets. Oh, your Honor, and ladies and gentlemen of the jury, look at my client. The learned legal brother is trying to get the sum of an arithmetical series from him as balm. Oh, again I say to you, this is a base conspiracy, and I rely on your sound judgment, and I feel sure that conspirators and blackmailers will fail in their attempt to extort money from my client. I am attending to that myself. (*Sits down and fans himself.*)

Judge—Gentlemen and ladies of the jury. You have heard the evidence on both sides. If you have a verdict for the plaintiff, let it be balm enough to revive his interest in mathematics.

If you find a verdict of acquittal on the charge of murder and extortion for the defendant, so let it be known.

(Silence in the court while the jury confers.)

(Jury files out of the room—in a very short time files back again, Chairman first. B weeps and A begins to bet with his lawyer on the length of time it will take the jury, etc. When jury is seated judge raps for order.)

Chairman of the jury—*(Arises.)* We have agreed upon a verdict—that is, I have, and the rest have come down to the same terms.

Judge—What is your verdict?

Chairman of the jury—Guilty, your Honor, in the n th degree.

Judge—In the eyes of the court, the problem through the proper reduction of radicals involves the personal equation such that $A = B + C$. C approaches infinity, through no fault of his own, leaving A and B to settle. B , in his charge of murder and extortion, has proved his claim, and A by his own *demonstration* has proved his intellectual quantities imaginary. Treat them both simultaneously. If A finishes before B , who will drink only half as fast, he will devote the rest of his term to determining the value of π , especially Omega and Nu π . The result is to be sent to Mr. Hoover and the Housewives' League.

(Exit judge, then jury, then the rest.)

A GRAPHICAL REPRESENTATION OF APPROXIMATIONS FOR SQUARE ROOT.

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In the January, 1918, number of SCHOOL SCIENCE AND MATHEMATICS a simple rule was given for approximations to any root of a number, and it was pointed out how any degree of accuracy could be obtained by successive applications of the rule. In this article it will be shown how the process can be represented graphically in the case of square root in a manner which exhibits the rapidity of convergence of the successive approximations and which also yields a test of the accuracy of each step. In the article referred to there is an inaccurate statement of the rough estimate of the number of decimals which could be depended upon, and this inaccuracy will be corrected below. It will also be shown algebraically how the method can be supplemented by certain corrections which yield additional correct figures.