You will not be charged for this call. This call is from 'Christopher' – an inmate at Monroe Correctional Complex. This call will be recorded and monitored.

Today's guest is Christopher Havens. Christopher's a convicted murderer; he's serving a 25-year prison sentence. But behind bars his life has taken an unexpected path, one of redemption, and that redemption has come through mathematics. Now we'll discuss this shortly, but first let's deal with the backstory.

Look, this isn't a crime podcast and it's not my intention to explore forensic details, but it is important, I think, not to ignore the severity of what happened.

In 2010 Christopher shot dead a 25 year old man named Randen Robinson, leaving his body in a Washington State forest. Christopher was 30 years old at the time, he was addicted to methamphetamine. He takes full responsibility for what he did, he pleaded guilty to second-degree murder and has accepted his punishment. In fact much of what Christopher is doing now – what we're about to discuss in the podcast – seems like an endless quest to make amends for a debt that he says can
never be fully repaid. We'll touch on this again later in the interview. Now as you've probably already figured out I'm talking to Christopher by telephone; we're speaking in 20-minute chunks because that's when the prison phones cut out. The sound quality is not ideal of course, but there are captions on the YouTube version of this episode if you want to check that out.

Hey Christopher, it's Brady.
- [Christopher]: Hey how you doing?

I'm good how are you?
[Christopher]: Oh I'm pretty good.

Whereabouts are you? Like what's the environment you're in at the moment? You're in like a phone room or something are you?

No, well the way it works is kind of how you see in the TV where we have this big area, this big open area, and there's all these rooms or cells. There's kind of like a common area where everybody congregates and then there's a few phones and that's pretty much it.

The phones are in the middle of the mix.
- [Brady]: In the movies and on TV it can usually get pretty hostile over who gets
to use the phones and stuff like that.

- [C]: Yeah, so fortunately I'm-- I've worked myself into a place where it's a little bit more relaxed. You know I-- I don't enjoy playing those-- the prison games and you know, I worked hard to get to where I'm at so I'm fortunate to not have to go through that.

[B]: Can I ask you a couple of questions about before prison mate? There's a couple-- to sort of get-- learn a bit more about you? [C]: Sure, go ahead.

[B]: As a boy, you know, as a youngster back in your school days what were you like? And what were you like at mathematics?

- [C]: Umm I was just kind of an awkward kid. I didn't really have a good time socially, I was always trying to impress everybody to fit in, I had a hard time fitting in; and mathematically I don't remember anything specific other than that math was not one of the subjects that I was, you know, anxious about. I never liked social studies or PE but mathematics was never one of those and I-- but I don't remember being very good at it.

My mother used to tell me that I would tutor people two grades ahead of me and I just-- oh
it's from so long ago that so many things
have happened and I've abused myself so much

0:03:22.640,0:03:28.160
in between there that I just can't remember.
[B]: Do you remember what like you aspired to be,

0:03:28.160,0:03:30.960
like obviously before things took
some unfortunate turns? Did you

0:03:30.960,0:03:33.280
have like a like a goal or a dream or anything?

0:03:33.280,0:03:40.240
[C]: I never had any goals before I came in
here. I was just kind of living life day to day,

0:03:40.960,0:03:47.440
I guess that's a little bit of a part of, you
know, the problems that I was facing. I kind of

0:03:48.000,0:03:53.920
view the underlying problems that got me in this
place as like an overwhelming need to try to fit

0:03:53.920,0:04:00.240
in with the rest of the people, and I think I
spent most of my life trying to do just that and

0:04:00.240,0:04:06.720
it ended up setting me in- in the same, you know, groupings as people who were causing problems.

0:04:06.720,0:04:10.640
There was a lot of moving around in my life
because of- my parents were in the military

0:04:10.640,0:04:15.840
and so I would uproot as soon as I started to
make some solid friends and then- you know, I'd

0:04:15.840,0:04:24.000
have to do it all over again and so it was always
this constant trying to feel accepted and it just

0:04:24.000,0:04:29.520
navigated me into all the wrong places, and
before I knew it uh that was my lifestyle.

0:04:29.520,0:04:33.040
[B]: I mean now that you have- I mean we're
going to come to this later obviously,
but now that you've learned that you have this aptitude for mathematics

I'm sure you look back at a lot of things with regret,

but is that one of the things? That you didn't kind of dig into that mathematics early on?

Yeah I always wonder what would have happened if somebody would have like— somebody would have sent me some number theory or somebody would have showed me some of the mathematics that today I would consider to be beautiful. Or if I would have stuck with it, I always wonder what would have happened because uh life is so much different and everything that I was looking for in my life back then is— you know, everything that I had fails in comparison to even, you know, what I have now. Which is odd coming from somebody inside of a prison but that's the reality.

You know, everybody I think takes for granted that a lot of the people out in society are actually inside of a prison themselves and I guess when I finally, you know, was able to forgive myself and accept myself for who I was and when I finally found something where I can live around this beauty that I see or— you know, build a life around this thing that I'm passionate about and I just—
everything just kind of took a beautiful tint and

0:05:38.560,0:05:41.680
life just changed.
- [B]: When you first-

0:05:41.680,0:05:45.920
you know, you've been sentenced right, and you're
starting this incredibly long sentence for a

0:05:45.920,0:05:49.600
you know a terrible crime; you haven't
found mathematics yet right? You're just

0:05:49.600,0:05:55.120
at the start of this prison term, how are
you thinking you were going to pass the time?

0:05:55.120,0:05:59.360
Where did you think you were going to find
purpose and meaning before the mathematics?

0:05:59.360,0:06:03.520
What- were you thinking I'm going to get really
fit, or I'm going to read lots of books, or

0:06:03.520,0:06:06.400
this is just going to be-
what were you thinking then?

0:06:06.400,0:06:12.800
[C]: Ah, I didn't have purpose and meaning.
So when I first came to prison all I knew was

0:06:12.800,0:06:16.480
what I'd seen in the movies and all
of my friends telling me, you know,

0:06:16.480,0:06:20.000
the first thing you do if you go to prison is
you find the biggest guy and you punch him in

0:06:20.000,0:06:25.280
the face and so that was my mentality. And
when I came to prison my dad was telling me,

0:06:25.280,0:06:29.040
uh you know, you want to be a clown fish
or you want to be a shark? And I said,

0:06:29.040,0:06:33.440
you know, in my mind as- you know, I don't
want to be a clown fish. And so I just started
playing these prison games and I—again I fell in with the wrong, you know, type of people and uh

I had thought originally that if, you know, I was serving such a long sentence that I would want people to leave me alone and so I just figured after all this— you know, watching all these movies for my life that if I did something crazy enough that they would leave me alone and not want to mess with me? And um I landed myself in the hole and that's kind of where it all started, I didn't have any purpose and, you know, there was no goal but that was it. That was— that was actually kind of the turning point in my life.

— [B]: How did you land in the hole?

[C]: It's a little complicated. There's a lot of politics inside of prison, especially when you go to like a very maximum security prison in the United States. If you go to one of those places you're expected to do some sort of, uh they call it 'putting in work' where you're— where you carry out some act of violence to kind of show what you're made of or to earn your stripes. And if you don't you become the target. And so I—knowing I had to do this sooner or later I uh I wanted to do it in such a way that nobody would want to ask me again?

And you know so I just kind of tried to fit their
criteria of what was um not to be tangled with,

and it got me in a lot of trouble and just- uh it didn't have the effect at all, it had actually the opposite effect. Everybody thought that I was willing to uh be you know somewhat of a loose cannon and then they all wanted to recruit me which was actually the opposite of what I was trying to accomplish and yep, that was that.

- [B]: Tell me about how it would turn different though? It sounds like it was this time in the hole where actually you found the light at the end of the tunnel, can you tell me a little bit about that?

- [C]: Sure. In the hole it's- it's loud, you can't see anybody, you're in your own room, it's just a small concrete room with a light that's on 24 hours a day - big old fluorescent light - and people go mad in there and they're slamming- you know they're kicking the walls, kicking the doors,

flooding their rooms - it's pretty intense. And so uh after several weeks of that I would just kind of, you know, play puzzles, do sudoku or I'd work out and I- I started noticing you know the patterns of ever- everyday life around there where you'd see the guards walking through in certain intervals at certain times of day and like the nurses or,
you know, other people. And I noticed this
gentleman coming in every day for the last few
weeks and he was like he was going door-to-door
sliding envelopes under people's doors,
and they were these big manila envelopes and it
captured my attention, it made me really curious,
and I remember one of those days I just asked
him -- I said hey what's in those envelopes?
And uh he didn't actually answer me he just slid
one under my door. And inside the envelope was
just a bunch of math. It was um basic math, like
pre-algebra and math for the trades, and-- but
I hadn't done any sort of education for--
well I want to say since-- I don't know,
10-15 years prior to that. And uh so I just kind
of soaked it up. And it was like everything I got
out of the sudoku puzzles but more; I guess
the computation was you know something that
my mind craved without me knowing it, but I just
started, you know, completing his packets and I'd
send it back to him and he'd send me a new one
with some feedback and I just kept on building
and building. You know, and we had been exchanging
a conversation around, you know, what types of
other types of math are out there, you know
what is number theory? And what is calculus?
Because I had no way of knowing any of that. You
know, he would provide stimulating conversation

and I would just keep on filling out his math packets and turning them back in and asking

him more questions and one day he sends me a kite, which is a prison correspondence saying,

you know Mr Havens, you surpassed my math abilities and I wish you left on your journey.

And you know he was just a math enthusiast but it had this meaning to me where, you know,

he's telling me that I was on some journey so—

[B]: Who was this, Chris? Who was this person?

Was he a prisoner or a visitor or—?

– [C]: No, he was a employee for the educational system inside of the prison and he was just, I guess, passing out course material which— I didn't know that I was doing any course material. It turned out that it was a math class, just like a beginner math class. But I just thought it was stimulating material to do in the hole and I realized, you know, like I was doing it all day all night and I'd wake up in the middle of the night solving these problems and, you know, like wake up saying, oh I got it! I figured this one out! And I'd write it down and I'd go back to sleep and I'd have dreams about it and you know; and I realized, you know, I was like— I was beginning
to grow passion for my education. And it was a little strange because after several months of this, after he sent me that kite saying that he— you know, that I've kind of surpassed what he had available for me I just started buying books. And I just bought the books by brute force, I had no idea what to buy first. So I was buying books that were way above my head, way below my head. You know, it was hard to find something that was in the goldilocks zone but, you know, all the noise around me they were all the people that I would— used to associate with and it just started sounding different. And I noticed right then and there that my thoughts, my values, were starting to change because it was kind of becoming annoying all of the— you know the convict mentality; and I've seen it for what it was right there, I was having these cognitive changes, I think as a result from studying mathematics and it just kind of floored me how powerful something that's just plain good can be. And I kind of— I just dedicated the rest of my time to the study of math after that and it wasn't long after where I just kind of stood there. I remember I came to like a fork in the road metaphorically, I was just— you know, they have
these gigantic concrete walls in this prison and everybody sees that as a symbol of confinement

and I- I remember I stood up one time and I'm looking at that concrete wall and it wasn't

a symbol of confinement, it was a blank slate where you know I could start over and I realised,

you know, I have 25 years, I could do whatever I want, I could learn whatever I want.

And in my mind, you know, the heroes were like instead of James Bond or the cowboys and indians

you'd have, you know, cryptographers or- they were all like wizards to me and so I- I said

you know I want to spend my time trying to become a mathematician. And that's kind of what I did.

– [B]: How did it go in the early stages? What do kind of the prison authorities think suddenly when one of their inmates is ordering in all these complicated math books?

[C]: Uh I don't think that they really realized at first. I started ordering all these books and,

you know, they were getting rejected left and right for being used or for being,

you know, outside of some strange obscure parameter that they have. And there's all these restrictions around ordering things: you have to order it from a certain type of bookseller,
and the bookseller has to be established
enough to where they're not in their own house,
or they're have to have to you know have to be
soft cover, and they have to be this and they have
to be that and- or it looked like it was used
or it was dog-eared or something, you know. So
uh they were rejecting them left and right and
I would file appeals and they were actually,
you know, when I was at that maximum security
whoever the head person was was passing them
through to me after I would appeal it, but then
I got shipped out shortly later and at that
next institution they were just rejecting book
after book after book and I would have my family
put them in the trunk of their car so that they
can try to, you know, bring them at a visit,
you know, and uh it got to where that trunk
was full of books that were being rejected.
And they were all sentimental to me, you know,
because they're like the things that were saving
my life. They were the things that had this
like- inside of those pages had this power to
to change the thoughts of this guy that lived a
completely wretched life and, you know, to me that
was just like the ultimate- I don't know, it's
just such a powerful thing some numbers can have
to change something that I wasn't even even
able to change myself for so long. [B]:
Christopher has had help from the outside; names you're about to hear include Luisella Caire and Umberto Cerruti; mathematicians in Italy who have befriended Christopher and nurtured his talent. Also Marta Cerruti, an academic in Canada.

[C]: So I told you that I started having these cognitive changes and they just kept on coming and it felt after a while that I was going through this emotional turmoil, like with all these, you know, interchanges that were happening it was like a tidal wave and so I put myself into a program to try to build tools for this. And meanwhile these books keep getting rejected and rejected and I was studying in like a sterile environment where it felt like, you know, I was around this thing that I loved so much but I couldn't see the things around me. It's almost like sitting in a classroom with a teacher behind you on the board writing out this beautiful mathematics and you know it's there, and you see the book in front of you, but you can't see what's on the board, you can't see those little added little nuggets of beauty, you know. And so I ended up writing- this is when I started studying a little bit of number theory, just basic algebra really;
groups, rings, fields. And I wrote to the Annals of Mathematics to ask them for a subscription,
and I let them know you know where I was at and I was curious to know if they had any people that they can put me into contact with. And they had politely responded that they felt like it might have been a little bit over my head, their journal, because it's kind of for career mathematicians and— which was true at the time, I didn't understand a bit of it. And they also sent me a a bunch of books, some of them by Devlin, they also sent me Flatland — or an annotated version of Flatland — which was wonderful. And uh, you know, at the time I had never even— I didn't know any math magazines existed so I didn't think to try to find something more at my level like, you know, Math Horizons or Mathematics magazine. So I just kept on studying and I started reading the books that they sent me and a couple months later I got a letter from a lady in Italy, Luisella Caire. And she just started mentoring me, it was wonderful because we would exchange these letters where I would tell her about all these different maths from the books that I was reading, or my studies, and you know we'd just kind of talk about
mathematics, she'd share culture with me and it was one of the most powerful experiences because

0:17:48.960,0:17:54.480
I was finally able to interact with somebody mathematically. Here when I tried to engage

0:17:54.480,0:17:58.720
somebody I had been reprimanded because I should have been studying, you know,

0:17:58.720,0:18:02.320
these prison politic things and uh

0:18:02.320,0:18:06.560
and that was kind of something that drove me away from that lifestyle even more, it was

0:18:08.000,0:18:14.560
just that a lot of people are so unsupportive of, you know, anybody that are trying to go a

0:18:14.560,0:18:21.360
different direction than the grain inside prison. So when I became in contact with the people in

0:18:21.360,0:18:27.360
Italy, Luisella, she just started feeding me culture and, you know, showing me these little

0:18:27.360,0:18:32.640
aspects of community. She was that first link into the community that I had- I didn't know I needed

0:18:32.640,0:18:41.840
but it opened up a completely different aspect of the world to me and uh it just lit a fire.

0:18:46.560,0:18:49.120
[B]:I want to ask you about the paper you had published

0:18:49.120,0:18:51.040
because I think that's a really interesting thing that happened,

0:18:51.040,0:18:53.920
can you tell me how it came about that you became a published mathematician?

0:18:53.920,0:19:03.280
[C]: Actually it was Luisella's method of teaching me was never to- she just mentored me actually I
should say. She— when, you know, when I would have problems in mathematics she would send me material to research the topic instead of just giving me the answers, and that had always been the way we would exchange mathematics. I would show her these long threads of thought of mine and instead of saying, yeah well this is what you do here, she would instead send me research articles or chapters from specific books around that topic that would kind of lead me down a rabbit hole a little further and further to get me to explore the topic and eventually land on the answer myself. And that's kind of how I started studying continued fractions; she would share all this wonderful number theory with me and I would always explore it because it was new and it was wonderful and I fell in love with continued fractions. And there was this one continued fraction whose partial denominators form the sequence of natural numbers: 1, 2, 3... it's a ratio of Bessel functions; there's no actual name for the number but Carsten Elsner and I started calling it the Braid, but it equals like 1.433n but I was struck by how all these beautiful continued fractions whose
partial denominators form these really neat patterns would have these really elegant explicit, you know, finite forms that you can write them in like $e$ or, you know, $\pi$ or whatever. So I was on this quest to just solve this continuous fraction to figure out an explicit and finite way to express it, and I guess it took me a year to learn that there was no solution in the terms that I was looking for but in the process I started trying to solve like a general case and I ended up uncovering family–you know, solutions to families of Hurwitz continued fractions that would give all of the convergents. And at that time her husband seen it, Umberto Cerruti, and we just kind of started working together at that point and he suggested research where we investigate what happens when you apply a linear fractional transformation to it. So I did and after another year or so I started sending results and we just began collaborating at that point, because some of the results that I was sending were new and I guess I found like that niche that I think every person who studies mathematics to any degree of seriousness finds where you can kind of go down a rabbit hole and get lost where textbooks, where nothing matters, it's all kind of locked there in your head you're just following your own thread.
because sometimes there is no material to pull
information from and that's that one little spot
for me, and we just started studying these leaping
convergents, so these Hurwitz continued fractions.

[B]: How did it feel to have a mathematical
paper published like- it must have been amazing?

[C]: Yeah it was amazing. To be honest ever
since I started getting in contact with Luisella
I- I had these surreal moments. It was actually
ever since I started studying mathematics but
my life just started having you know these
things happening to me that were surreal,
and and I knew it was because of, you know,
my involvement in mathematics doing something
good. And every- you know, it would never fail
that something else would happen that was just
so so powerful that I just couldn't quite believe
that it was happening and, you know, at the time
my mother and I - oh we talk all the time - and
she was like always behind all of my interactions,
especially email interactions, because she
used to help me with all of my correspondences.

We don't actually have the internet here.
So uh I'd ask her I'd say, hey is this
this really happening? She said, yeah I think
so! And uh I would just kind of- you know,
it was one thing after the other but when the paper was coming out I said you know I don't want to believe it because if I do something's going to happen and it's going to get in the way of it and we just kept on working and kept on working and we submitted the paper. And it was surreal for me too because I got to see the referees, you know, chewing it and spitting it out and it going back and forth and, you know, it got rejected from a few uh journals at first but it was wonderful to watch it evolve from the state where we submitted to the state where it got accepted and when it got accepted it was just this whole new feeling inside of my heart, where I was like- uh. I mean this is the life that I could have just by studying math. And if this is the life- if this life is already making me feel so full of, you know, joy and love inside of a place like this then I'm- I'm in 100% I'm in, can't get rid of me. - [B]: Do you keep a copy of the journal like in your cell or anything? [C]: Yeah I- I keep a copy of it in my room but I also uh, I still use it when I'm doing current research. We're actually extending the research today, uh Stefano Barbero, Nadir Murru and Carsten Elsner;
a gentleman in Hanover who also researches a lot in leaping convergence. And so we're getting together and we're defining uh this concept called natural leaping convergence and uh- so yeah we're adding to it and it's exciting because this is a different feel, I have a little bit more experience and we're moving at breakneck speeds with respect to what I'm used to, and it's wonderful. I don't know, it's a type of connection where you can build friendships and have social interactions that lead to expanding our wealth of human knowledge, and there's no real words for that, I think there's- it's the most powerful thing that I can, you know, I can think of and it's just such a beautiful aspect of the math world. - [B]: Have you ever found mathematicians and people unwilling to work with you because of the stigma of being a prisoner? - [C]: Uh yeah in a sense. I mean, you know, what was weird is when the paper came out there was a lot of claims made on the internet, there was a lot of people that just started piggybacking off of other articles and oh man there was like a claim that somebody made about, that I solved an ancient math problem which is completely not true. And then some other
person took that and piggybacked and, you know,

0:25:17.600,0:25:23.360 and then extended the exaggeration further, that I was solving problems that Euclid himself couldn't

0:25:23.360,0:25:29.680 solve and then people started calling me a genius – which I'm definitely not. And it made it really

0:25:29.680,0:25:34.480 difficult because either the people that I started coming into contact with in the math community

0:25:34.480,0:25:38.800 was- they were under the impression that I was some genius and so that they were

0:25:39.920,0:25:42.800 communicating with me on a whole another level that I wasn't actually

0:25:43.520,0:25:52.000 equipped to- it was damaging. Or, you know, a lot of people I- a lot of people I come

0:25:52.000,0:25:55.920 in contact with, every once in a while I'll come in contact with somebody who's just an

0:25:56.560,0:26:04.400 extreme elitist. It's unintentional but I think my personality kind of uh clashes with them and

0:26:05.120,0:26:12.000 I find that I- I just kind of embrace the people who are embracing inclusivity a little bit nicer,

0:26:12.560,0:26:17.120 even flourishing, because one of these guys was you know- we started interacting about

0:26:17.120,0:26:19.440 a topic that was close to me

0:26:19.440,0:26:25.760 and he learned that I'm not formally educated and it just rubbed him the wrong way and he wanted to

0:26:26.800,0:26:28.400 convey after that

0:26:28.400,0:26:31.200 nothing but – you know, you should be
waiting to research, you shouldn't be doing any of this. And I said, well what if it's just something that kind of comes out in my heart that I just- I can't really- you know, like if I'm sitting in front of a pen and paper just trying to enjoy, you know, mathematics and have fun and just express myself, I'm not going to stop doing it because you say that I have to have some specific education involved. [B]:

If you care to look it up, Christopher's paper is entitled 'On non-linear leaping convergents of a linear fractional transform of Hurwitz continued fractions'.

Christopher's modest, he's embarrassed by some of the media hyperbole that has surrounded this paper. He hasn't solved some ancient riddle or anything like that, despite what you may read, but to my untrained eye it still looks pretty advanced and impressive.

Let's deal with the Prison Math Project because obviously that's a pretty amazing thing you've been involved with as well. Can you tell me why and how that came into being? [C]: Well historically it started in 2015 as a result of the prisons rejecting so many of my books.

Luisella and I were exchanging correspondences once and, you know, it was a bummer because she
was sending me her own manuscripts and books written by her colleagues and they all had value to me. And I was crushed when they were rejecting them and I told her almost in joking that I said, you know what? Well, I'm going to move institutions and I'm going to infiltrate their educational system by starting a math program and I'm going to build a library and I'm going to get those books. So we just started planning this math program where we can actually solve a couple problems: we can, you know, build a library to use the books but we can also create a space for peer interactions which I've never had. - [B]: It's just like the Shawshank Redemption, the prison film, where he starts a library! - [C]: And there's some- there's some similarities to it. So we started this program and I remember going through all this red tape and after so long I'm sitting in this office with this prison official and he's- he calls me up there and he says, he's typing on his computer and he says, hey so what are you gonna call this thing? And I'm- I felt so, you know, like I was taken back because I hadn't thought of a name for it. And I said, do you need the name right now? And he says yeah, I'm on the- I'm on the computer emailing this lady and she needs it right this
minute. And I said— and I just said the first

0:28:58.480,0:29:02.560
thing that popped in my head and it was Prison
Mathematics Project. And I knew right there,

0:29:02.560,0:29:10.800
he kind of grunted he said, huh that's good. I was
like, yeah it is good. And the name stuck, and so

0:29:10.800,0:29:16.400
we had this program that took off and it started—
you know, there was a lot of really wonderful— we

0:29:16.400,0:29:21.120
would go in this classroom and we would just
kind of like express our love for mathematics

0:29:21.120,0:29:28.160
by teaching these concepts in self-contained, you
know, sessions. And I would always put, you know,

0:29:28.160,0:29:33.200
sequences on the board for people to solve and I
would— I would do all these things. And after a

0:29:33.200,0:29:38.640
while it just started becoming like a community.
You would have these people that would see each

0:29:38.640,0:29:43.520
other on the breezeway in the middle of this
prison, and instead of turning the other cheek

0:29:43.520,0:29:47.360
because of our differences or, you know, they
would— they would interact with each other.

0:29:47.360,0:29:52.400
And so it started building community. And it
was so wonderful to see that that, you know,

0:29:53.200,0:29:58.000
meanwhile the officials here were— there were
staff members that were just fighting me to

0:29:58.000,0:30:02.560
get this program shut down because it was
causing them to have to work a little bit

0:30:03.200,0:30:08.960
of extra hours or an extra half hour actually.
But it was too much for them and so they
fought at an administrative level with me and they eventually won out, so I just started using the Prison Mathematics Project as a way to hold these events inside of prison, so that's kind of how I did the first pi day thing where I- I just— I figured, you know, I'm just going to invite everybody in the math world that I know and if I get lucky maybe one of them will show up.

Invited everybody I knew and ever- every single one of them said, yeah let's do this, we're coming — and including all of my friends in Italy, and it was just this whole almost magical experience. I had all of my biggest influences coming under one roof in this prison on this one day. And the prison administration was so mad at me because I didn't stay in my lane, I invited people without their permission — which isn't entirely true, I had permission from one of the staff members, but since he was helping me I didn't give them his name. You know, you find somebody that gives you support so you want to continue that support by not getting them in trouble. So I bit the bullet and the event went without a hitch, and because it went without a hitch I did not get in any trouble but they were pretty strict on me the next year. After Covid hit we weren't even
able to hold any events inside of the prison,

0:31:28.800,0:31:34.400 everything shut down. Education inside prisons came to a screeching halt, all of prison

0:31:34.400,0:31:41.920 programming they started quarantining everybody, or cohorting. You know, the prison was segregated

0:31:41.920,0:31:48.640 by our units and- and it shut everything proactive down. It shut all these self-help things –

0:31:48.640,0:31:55.360 this is the time right around where the journal article had been published and Umberto's daughter

0:31:55.360,0:32:01.120 Marta Cerruti wrote an article in The Conversation about me. It went viral and in it she asked me,

0:32:01.120,0:32:04.720 well what do you plan to do when you get out of prison? I said, well I'd like to launch the Prison Mathematics Project as a non-profit entity and provide it for people across the United States.

0:32:04.720,0:32:10.720 And this person had read the article and he was so inspired that he reached out to me and said,

0:32:10.720,0:32:15.600 you know, I would love to help you with that. And he started talking about re-entry and recidivism and all these topics that are pretty sophisticated topics. And I

0:32:15.600,0:32:21.440 felt at the time that, you know, I was talking to some college-educated gentleman that- and it turned out that at the end of his email he had indicated that he was in a high school drama class, you know. I was like oh! So I said uh, you know, I said unfortunately
I said uh, I don't know if I could work with you, you're young. But I had sat on that for a while and thought about it real hard and I had just kind of pictured for a moment that he's probably experiencing the same type of limitations that I experienced in here by people not taking him serious because of his age, where people a lot of the times don't take me serious because of my incarceration. So I emailed him back and I said, you know, if we get your parents on board, if your family is- if there's a complete transparency going like, I would be willing to you know explore this with you. And so we did, and we ended up starting this non-profit organization.

You know, the more we worked on it, the more people started jumping on board and we just built this program around the limitations of the pandemic so that we could offer educational experiences and mentorship to people without actually having to come inside of the prisons in such a way that you know all of their information, all of their personal address information and whatever is secure so that there's no risk, also there's no risk of Covid. And it just kind of took off, it just started growing with a mind of its own, and we started having all these people in the math community just jumping to
to help. And prisoners started hearing about this

and we're getting letters from all these prisoners across the United States saying, where have you

guys been? I've been studying and I've had no idea where to go next, and what to do, and this is what

I love to do you know? I found that there's a lot of people that have a similar story to myself.

- [Automated Voice]: You have 60 seconds remaining.

[B]: Look I'm afraid this is what prison phone calls are like, but don't worry, Christopher will

phone back shortly. But while we have a second, I will point out that schoolboy who contacted

Christopher was Walker Blackwell, and he remains a co-director of the Prison Mathematics Project.

[C]: We get these letters every once in a while from these guys that are saying that,

hey uh I've been studying mathematics, this is what I do, this is what I love,

and I don't- you know, I have no idea where to go next and I just I want to be involved, you know,

they convey how they want to be involved in you know in something bigger but they don't know

how to how to reach for it and how to obtain it. And they don't have these solid goals

because they don't actually know what goes underneath their feet as far as the foundation,
you know. And it's just a wonderful thing to be able to start to connect these people with real mathematicians and educators and just members with the math community. Because what we do is,

we don't actually teach people mathematics from the ground up, we expect people to be studying on their own already and we work as kind of a simulation of what Luisella was giving for me, a mixture maybe of what the older gentleman in the hole and Luisella did. Our mentorships provide prisoners with support and we teach them about community and culture of mathematics and we push them to go a step further towards making contributions to society during this time of their incarceration. So the idea is that having these transformational experiences myself, and how powerful they were and how they lit this fire inside of my heart, I want to share it and I want to give other people that because I know that that's kind of what led to my walk on a path of desistance from crime.

- [B]: What do other prisoners who aren't into mathematics and like prison guards and that think of all this like when they- when they see what you're up to?

-[C]: Uh this is kind of a funny question because I have a little bit of a reputation of
being a little weird in that respect.

0:36:28.720,0:36:33.680
Uh we don't have a lot of the things that you guys have out there in the community like a blackboard;

0:36:33.680,0:36:40.720
so uh there have been times where the inside of my room has been covered in paper and the inside

0:36:40.720,0:36:45.920
almost gift wrapped, where I'd just be standing on my toilet trying to reach the equation up top,

0:36:45.920,0:36:52.000
you know, uh and carry the 1 or whatever. I can have some prisoner or a guard walk by and just

0:36:52.000,0:36:56.960
see what the heck is going on inside the room and be like, what in the hell is going on in

0:36:56.960,0:37:01.840
there? And it would freak people out. Or for like these events, I'd be memorizing digits of pi,

0:37:01.840,0:37:08.400
like thousands of digits of pi. I remember for the 2017 pi day event I was- we were doing a contest

0:37:08.400,0:37:14.400
and I had memorized 1,111 digits of pi. And to do that I had to walk around here spouting digits

0:37:14.400,0:37:18.800
of pi to myself. And I was doing something productive but in my mind,

0:37:18.800,0:37:24.400
and in these guys- all they saw was this guy rambling numbers talking to himself walking

0:37:24.400,0:37:29.520
back and forth up the tiers. Or I'd be- you know I- when I study I memorize definitions

0:37:29.520,0:37:33.200
so that I don't have to refer to them in the book all the same time and it

0:37:33.200,0:37:38.480
just kind of gives me a different, you know, type- feel for um when I'm studying if I
memorize definitions I kind of lock it in my head a little bit differently than when I'm just normally studying. So I will walk outside of my room and I'll just kind of do laps on the tier where I memorize definitions for a while and- or you know, just things and it kind of um a lot of people see that and you know there's there's a lot of crazies around here so I imagine a lot of people thought I was crazy.

- [B]: Have you developed other interests and hobbies or have you just become a 100% math nerd?

- [C]: Well, you know, uh my buddy Ahmed tells me that I- I'm like a mathematical monk but I do kind of have a few things. I- I draw - uh although my drawings are mathematical also - but I uh I like to do ink, you know ink drawings, and I have this really strange application of uh just I send the ink out using a chemical that's available to me in prison and I kind of make different hues of this one kind of pen that we can buy off of our commissary. And I come up with these like these drawings with it looks like several different colors but it's all from the same pen and I just kind of paint it on there. So I like drawing, I don't know organizational stuff is probably the other thing. I love having my hands on as many moving parts as possible, it's
just something about when it all comes together it's magical. And it's a personal challenge to
juggle all these- all these logistical pieces and put them all together in such a way that music
happens, you know, and it's uh it's so fulfilling. - [B]: Do you ever wonder what would have happened
in your life if you hadn't been imprisoned? If you hadn't committed that terrible crime and gone to
prison? Because I know you were having a lot of problems with drugs and things like that like-
like what do you think would have happened? - [C]: I think that I would have either
still been out there doing the exact same thing or I would be dead.
Uh I have mentioned this a few times that- well I don't want you to get the wrong impression
that I think that uh what I did helps me in any way, because it didn't, but the
actual state of being in prison is probably the best thing that could have ever happened to me
because it helped me to change the person that I was and to see these things that I was doing.
You know, after uh maybe year two, year three at the latest, I started examining the things,
the behaviors, that really led to a lifetime of making bad decisions. Just what what in my life
kind of was the root of the reason why I'm here today; and I would have never examined that type

of thing, and I surely wouldn't have this uh this ability to see the beauty in all things

had I not found mathematics.

In other words had I not come to prison. Because I was just too caught up with myself I think,

and I was too caught up with what everybody else thought of me to actually– I I just,

you know, there was no time in my life where I had the the common sense to pull my head from my

butt long enough to get the real picture.

- [B]: Do you often think about when you're finally released from prison? What you want to do, what you want your life to look like when you're no longer incarcerated? [C]: Yeah, actually I– um I used to make these goals in prison and I'd come

up with them so fast that I decided at one point that I thought I'd try to start my career while I

was in prison. And I started doing that recently, I became the executive director of the Prison

Mathematics Project, except I decided that I would work– uh while I'm here, I would work for free

and just kind of do this as, you know, something that I enjoy doing anyway.

So this is kind of part of it, I always want to have a big active role in the organization because
it's helping so many people and we're expanding in an incredible way, but to be a 100% honest –

and I know this is going to sound a little silly –

but Erdős had it right man. Yeah he– I want to– I just want to live a life of you know um surrounded by mathematics at all times where I can be– where whatever I'm doing is just kind of contributing in some way. Where my social interactions uh instead of you know have no meaning. So I believe that when I get out I'm going to continue my work in the Prison Mathematics Project;

we'll have expanded probably many times since then and I just hope to continue research. I want to throw events and I want to attend events and I want to talk at events and, you know, share in any way my story that can help people to not make the same mistakes that I have. Or, you know, if I can inspire people to do wonderful things and that's also a plus. But that's kind of the work I want to do, I want to continue the diversification and popularization of mathematics.

[B]: Christopher, prisons have a few roles in our society; one of them is rehabilitation and you seem to be a really good example of that.

Another one is punishment, you know, the
taking away of freedom as a punishment for

0:42:37.120,0:42:42.480

crimes committed. How do you reconcile those two
with what you're trying to do with the project?

0:42:42.480,0:42:47.200

Because part of this is kind of, you know,
giving more freedom and empowering and connecting

0:42:47.200,0:42:52.960

prisoners with the outside community, which seems
to be- rub against the punishment but it also is

0:42:52.960,0:42:58.160

doing a lot of good for the rehabilitation. Do
you ever see any clash there or not? [C]: Well

0:42:58.160,0:43:04.080

no, I don't see clash there but there are
people who feel a little uh animosity towards it.

0:43:05.520,0:43:11.840

Their idea is that justice might not be
being served in the most appropriate way,

0:43:12.560,0:43:20.880

but having lived here I say this: what is justice?
Is justice the act of serving 25 years in prison

0:43:20.880,0:43:26.320

and misery so that they become a better criminal
and get out and make the same or worse decisions?

0:43:26.320,0:43:33.040

Or is justice the act of finding a way to forgive
yourself so that you can become the best version

0:43:33.040,0:43:37.680

of yourself and not make the same mistakes so
that you get out as a different individual,

0:43:37.680,0:43:43.600

somebody who's no longer a threat to society?
I think that's justice. I think justice is

0:43:43.600,0:43:51.840

somebody who can fit back into society in a way
that is complementary. And I think justice happens

0:43:51.840,0:43:57.920

when true change happens within the individual
that caused the disruption in the first place. So
our program uses that idea. What we want to try to achieve is a community-based system of restorative justice, so that the community becomes a factor in the rehabilitation of these individuals.

And the idea behind that is that if I decide- if I'm in prison and I all of a sudden decide that hey, you know what this lifestyle is not working out for me, I need to change. I need to become a better person. And so now I'm under this mindset that I want to change who I am and change my lifestyle, but who do I have to model into? Where am I going to go? What lifestyle do I go into? Because all I see around me is the convict mentality, so how am I supposed to model into a new lifestyle if I don't even know what's out there? And so, if I have this passion for something, and I'm given this ability to build a life around this passion for higher education - and in this case mathematics - well then I've- through the Prison Mathematics Project we give them that first link into the community, that one link.

And they have this one opportunity to to build a relationship with somebody in the community. And if that person does really good while they're incarcerated, and if that mentor decides that that person's
interactions were fruitful and full of positive growth, and if they you know have built a dynamic with them then they have the opportunity to take that mentorship out into the real world.

- [B]: Earlier on you mentioned your parents and

your family, I imagine when you went to prison that must have been a terrible time for them, when you were sentenced. How do they feel now that you're a published mathematician, you're the executive director of this project, you've really turned things around. What's been your family's reaction?

- [C]: Uh, I uh- at first my mother didn't believe when the detectives called and said that I was in prison for murder, uh because it didn't fit with the way I was on the inside and I had just been down this road of making all these incredibly bad decisions, and she just couldn't believe it. Even after I first became incarcerated I was still just kind of a knothead. And then when, you know, I started finding mathematics I think all these changes started happening and they became so evident, and I hadn't mentioned that she was such a presence in my life already, her and my daughter Hope, that they got to see everything happening in real time with me. And they saw all these changes beginning to occur and, you know,
I've had a lot of conversations about this with them in fact and it's just like a wonderful thing to them as well, and I've even built a relationship with my father again who I- I am assuming felt that I smeared the family name, and you know at this point in time I think that he's no longer no longer in that mindset. So I- it's actually strengthened my relationship with my family just due to all the efforts that I've been making with myself and with them. It's just kind of a different- I don't know, it's night and day.

- [B]: How do you want to be remembered? What do you want your legacy to be now?
- [C]: Well I think- you know I- I don't have a big attachment of being remembered. But if I do I would like to be remembered for my push for a diversification of mathematics to this prison atmosphere. I want to change the culture in this place so that it becomes a breeding ground for productivity. I would like to redefine what productivity looks like in prisons, and I would like to smash this idea of the convict mentality and turn justice into something that is beautiful. That's what I would like to be remembered by.

- [B]: Christopher has never been in touch with the family of the man he murdered, Randen. He's not allowed to contact them but he
does think about Randen daily and he refers to

his new life of education and research and mathematics as repaying an infinite debt.

- [C]: I know this is going to sound really silly probably to you but like I have

this feeling that's inside. You know— you know that passion when you're studying something and you can feel it in your heart right? You have this singing feeling? And I've just been trying to like do well enough and make that feeling sing loud enough that it's heard. I know that sounds strange but like I just wanna— I just want my actions to— I just think that my actions if I do well enough will reach the people and, you know, I just hope that they can see that at least the person that caused them this pain is not sitting inside of a prison trying to become a better criminal.

Christopher Havens is now 42 years old. He's been locked up since he was 30.

The best case scenario could see him released in 4-6 years but it may be longer. In the meantime he hopes to grow the Prison Mathematics Project across the US, into Canada, and maybe into the UK. The program's main purpose remains finding kind of mathematical pen-pals or mentors for people who are behind bars;
linking them up with the sort of people who have helped Christopher flourish.

There are also plans when appropriate to perhaps get teachers and mentors into the prisons themselves. The project is a non-profit organisation, I'll include some links in the episode notes so you can find out more. The Numberphile podcast is made possible by the Mathematical Sciences Research Institute. You can also support us at patreon.com/Numberphile

I'm Brady Haran and we'll be back again soon with another episode of the Numberphile podcast.