

The Edges That Remain
Production Script

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Cast of Characters

ELEANOR Hamilton is the young heroine. She is in her early twenties.

HANNAH Hamilton is her very beautiful sister. She is about a year older.

Prince Daniel ATHERTON is a handsome and important person. He is the prince of the kingdom and ruler of the immediate area. He is in his late twenties.

Mister SUNSET is less handsome and less important. He is in his late twenties.

Madame PENEPEPE is a fairy godmother, bartender and lawyer.

Notes

This play was written for a production in the Holden (Experimental) Theater at Amherst College, a blackbox theater. All but a few pieces of the scenery are created by the performers in the space by drawing in chalk on the floor and walls. All entrances and exits are written with respect to the current setup of the theater—that is, there are two doors upstage behind the back curtains, denoted stage left and stage right, and there are two doors to the side of the audience, denoted audience left and audience right.

$\mathbb{P}^2(\mathbb{C})$, the projective complex plane, is a superspace of the complex plane, which is itself a superspace of the two-dimensional real plane. It is pronounced “P-two-C”. $\mathbb{P}^2(\mathbb{R})$, the projective real plane, is similarly a superspace of the real plane. These projective spaces, intuitively, are essentially their affine (i.e. normal) cousins plus some line at infinity. While they are harder to understand geometrically (relative to the real—Euclidean—space that we see as spacial reality) they have very nice algebraic and geometric properties thanks to their completeness. In a parallel comparison, the complex plane is a superspace of the real plane that is less intuitive geometrically and more beautiful mathematically. Chalkboard bold is a “font” used in writing on a chalkboard (or paper) to create bolded capital letters.

All scenes that numbered as well as the prologue and epilogue are “canon”, in that they are actual events that occurred in the reality of the play. Other scenes occur in dreamscapes or inside the imaginations of the characters.

And There Were Five

ELEANOR *is sitting on the floor and writing in a dim light. Lights go up to reveal an ornate lecture hall inside the Academy. SUNSET enters stage left, draws a podium on the floor, and exits stage right. ATHERTON enters stage right. He has a stack of index cards in his pocket, which he pulls out before he speaks and refers to throughout his speech.*

ATHERTON

Five, a beautiful number. It's not as famous as π or e , but it has its places in history. There are only five platonic solids—what the ancients believed were the shapes of the five elements the world was made out of. Many symbols that carry religious significance are based on the five-pointed star and the regular pentagon. (SUNSET *enters stage left carrying a picture of K_5 .*) Here we have five nodes, and we connect every pair of them with lines—edges—to obtain what we call K_5 , the complete graph with five vertices. It can represent many, many things. Say, the nodes could be cities and the edges roads between them. The graph could also be a chart that displays contracts between companies or treaties between countries. In a more intimate setting, it may be five people and the edges would represent something mutual—handshakes, or friendships, for example. (ATHERTON *covers up a node in the picture.*) Notice that even if you start removing nodes—and the associated edges—of the graph, the symmetry still holds true. True, it doesn't look very symmetric now, but I can redraw this like so. (ATHERTON *pulls a piece of chalk from behind the picture, and draws a standard planar drawing of K_4 .*) The symmetry isn't just in the geometry itself, but in the completeness of the relationships between the five vertices. And it carries down to four, three, two, one, and even zero. (SUNSET *exits stage right.*) Most people tend to discount the cases of one and zero, partially out of fear. One incites loneliness, and zero despair. But a graph with no nodes is really the most flawlessly symmetric system in the world. After all, there can't be any flaws if there is nothing there to begin with.

ATHERTON *bows and exits stage left.*

Act I: A Tale of Magic

1.1 - A Tale of Magic

SUNSET *enters with a book. He sits down stage left and reads from it. ELEANOR freezes. Characters are frozen during this scene while SUNSET reads.*

SUNSET

Once upon a time, in one of the many kingdoms of the world, there lived a poor maiden by the name of Eleanor. Her father Sir David Hamilton, the most famous mathematician of the land, was an evil man. He knew that she was a genius and naturally much more adept at his art than him, so out of jealousy and selfishness he kept her under lock and chain and forced her to write his treatise on the mathematical arts for him. All through these years his favorite daughter, Hannah, never once helped Eleanor. The only time she would visit Eleanor's cage was to show her new dresses and gifts she got from their father.

HANNAH *enters stage right and approaches ELEANOR.*

HANNAH

Hey Ellie, do you like this dress?

ELEANOR

Fuck off, cow.

SUNSET

After Sir Hamilton presented the papers Eleanor wrote as his own, the Council showered him with the highest of praises. Prince Atherton, the youngest and most brilliant member of the Council, decided to hold a gathering in his honor. He had invited many sages and wizards from around the world, as

well as Hannah. Leaving her poor sister behind, Hannah put on her best dress and headed for the castle. Seeing her for the first time in many years, the prince instantly fell for Hannah's beauty and charm.

ATHERTON enters audience left and approaches HANNAH.

ATHERTON

Lady Hamilton?

SUNSET

He asked, holding himself back from shaking.

ATHERTON

Will you honor me with a dance?

HANNAH

Gladly, my prince.

ATHERTON takes HANNAH into a dance.

SUNSET

Eleanor, left alone in a cold, dark night, refused to shed a single tear for her misfortune. It was then that a bright light appeared in front of her and a strange figure appeared.

PENEPEPE enters stage left and appears next to ELEANOR.

PENEPEPE

Oh poor lass, I hope I am not too late!

SUNSET

—she said.

PENEPEPE

You have suffered so much, poor Eleanor! But don't worry, I will make your dreams come true—I am a fairy godmother who will grant you your heart's desires.

SUNSET

And Eleanor, still in disbelief, named her wish for this strange, winged woman.

PENEPEPE

So Eleanor, what is your wish?

ELEANOR

I want my father to burn in Hell and my sister abused like a stray bitch in a back alley.

PENEPEPE

Well... don't you have any non-violent wishes?

ELEANOR

If that's too much, I would settle for just some fire and brimstone.

PENEPEPE

Listen, dear, I don't do that "evil" thing. You see these wings? They're nice and happy wings. I've got a pretty tight schedule today, so why don't I just give you the standard package?

SUNSET

With a wave of her hand, a bright light transformed Eleanor into a beautiful lady free of the scent of her books and the dust in her room. Her ragged dress turned into an elegant gown that rivaled even her sister's dress.

PENEPEPE pulls ELEANOR's blanket off, revealing a chaotic but pretty dress. And then she shoves her over to stage right. ELEANOR stands frozen and amazed.

SUNSET

When Eleanor opened her eyes she found herself in a large hall fit for kings. All around her were wizards and sorcerers in their scholarly robes. They spoke to each other of things that she has only read in her father's tattered books before. While all this fascinated her, it was the handsome Prince Atherton that caught her eyes.

HANNAH and ATHERTON finish their dance. HANNAH exits audience left while ELEANOR approaches and starts talking to ATHERTON. PENEPEPE exits stage right.

SUNSET

She boldly approached Prince Atherton after his dance with Hannah, and talked exquisitely with him and several Council members who were around them about her father's work.

ATHERTON

Speaking of Sir Hamilton, where could he be?

ELEANOR

I wouldn't know, your highness.

ELEANOR writes something on the wall to clarify something for her audience.

SUNSET

Not knowing that she was the original author, Atherton and the others were shocked by this girl's knowledge of such arcane matters. Although he believed that he was in love with Hannah and had made up his mind to propose to her this very evening, Eleanor's beauty and intellegence gave him second thoughts.

ELEANOR

Pardon me, but what are those curious pastries over there?

ATHERTON

Nothing short of the finest eclairs in the kingdom.

ELEANOR

E-clair?

ATHERTON

You have never tasted this delicacy before?

ELEANOR

No, your highness.

ATHERTON

Then you must simply sample one at this moment!

ELEANOR *exits stage right.*

SUNSET

After bidding Prince Atherton farewell, Eleanor hurried away. The prince, still dazed by her bold display of knowledge, noticed the notes left by this mysterious girl.

ATHERTON

Wait, this handwriting—

SUNSET

—he exclaimed—

ATHERTON

—produced the paper on my desk, submitted for review yesterday by Sir David Hamilton!

HANNAH *enters audience left and attempts to speak to ATHERTON.*

HANNAH

Sir Atherton? Would you like to accompany me—

ATHERTON

Pardon me, my lady. I must think upon something important. In the meantime, why not try one of those delicious eclairs?

HANNAH, *dejected, goes off to the stage right exit. She does not exit.*

SUNSET

Realizing over a glass of fine wine that he is obsessed with the mysterious girl he had just met, Atherton left Hannah behind. After the longest minute of his life, he found Eleanor under the moonlight.

ELEANOR *enters audience left.*

ATHERTON

What is your name, my dear lady?

SUNSET

—he asked.

ELEANOR

Eleanor Hamilton, my lord. Second daughter of Sir David Hamilton.

SUNSET

Upon hearing her answer, the prince stood confused.

ATHERTON

But Sir Hamilton has only one child—

SUNSET

—he said. At that moment, a wonderfully dressed woman approached the prince.

PENEPEPE *enters audience left and approaches* ATHERTON.

PENEPEPE

Sir Hamilton is dead, my liege, and in his death we found the truth.

SUNSET

She reported the details of his deceit, his sin and his web of lies. She told the prince of Sir Hamilton's disregard of law and order, of his honor and of the Crown.

ATHERTON

I thank you, lady, consul, and friend. All becomes clear! It was Eleanor who wrote the words that I fell in love with!

PENEPEPE *exit audience left.*

SUNSET

In a moment of realization and joy, the prince got on his knees.

ATHERTON

Marry me—

SUNSET

he said.

ATHERTON

I'll make it up to you, pay for the sins of your poor, misguided father. I'll shower you with praises and riches worthy of a woman of your beauty. Marry me, Eleanor.

SUNSET

And she answered in the affirmative. With joy and passion in his heart, Atherton kissed—

ATHERTON tries to kiss ELEANOR, but she stops him.

ELEANOR

(*To SUNSET.*) Not before the wedding.

SUNSET

—and they lived happily ever after.

ELEANOR and ATHERTON stay frozen. HANNAH and PENEPEPE exit. SUNSET closes the book and exits audience right. Lights fade.

1.* - Happily Ever After

PENEPEPE enters stage left. She interacts with the frozen ELEANOR and ATHERTON during this scene.

PENEPEPE

Definition: A story is an interval of time in the life of a person, whom we call the protagonist. Definition: Happily ever after means: “for all time after the end of a story the protagonist lives a normal happy life”. Note: Authors make that statement quite often, and they’re usually wrong. Example: 14% of fairy tale marriages end up in divorce or separation due to the used-to-be-poor girl’s discovery of—and the subsequent obsession with—the royal fudge factory. Example: 36% of well-matched royal couples break up during their wedding night when the bride realizes that her prince’s thick shining armor and that sword he slayed the dragon with were really his ways of overcompensating for other inadequacies. But then again, who’s to say that the girl who drowned in the tub of chocolate wasn’t happy up until the point she died?

PENEPEPE exits stage left. ATHERTON and ELEANOR exit audience left.

1.2 - Looking Along The Orthogonal

Grand ballroom of the royal palace, during the party described in Scene 1.1. ATHERTON and SUNSET enter the balcony of the palace ballroom with a glass of wine in hand. During the scene PENEPEPE sets up the band.

ATHERTON

She scares me.

SUNSET

Because she's smarter than you?

ATHERTON

No.

SUNSET

I think you're in denial.

ATHERTON

No. I'm not in denial. I'll admit that she's brilliant—more so than any little girl should be.

SUNSET

She's not little.

ATHERTON

Well, you know what I mean.

SUNSET

You want her.

ATHERTON

No I don't.

SUNSET

It's written all over your face.

ATHERTON

Why would I want a girl like her?

SUNSET

Why not?

ATHERTON

She's rude, messed up in her head, and not all that pretty to look at. Just look at that dress!

SUNSET

She reminds me of you when we were kids—before your parents sent you off to military school and you got some social skills and a sense of fashion.

ATHERTON

Very funny.

SUNSET

You want her because you think she's the only one who can understand you. You want to box her up in a castle so she can keep you company. You want a woman who not only can cook and bear children and fulfill your every need, but can offer you intellectual conversation.

ATHERTON

I go to you for conversations.

SUNSET

Right, but despite how close we are as friends, you still need to play the prince and mentor. You want someone who you can talk to intimately. And—no offense—I'm never going to have a conversation with you under a blanket.

ATHERTON

None taken.

SUNSET

Look, it's not like you're going to propose to her or anything. At least go find out her name. It's a lot nicer to ask a lady for her name in person than to send the Royal Intelligence Service to find it for you.

ATHERTON

I think—

SUNSET

I think if you don't do this, you'll end up regretting it.

ATHERTON hands his glass to SUNSET and walks off the balcony. HANNAH enters audience left and ELEANOR enters audience right.

HANNAH

What the hell are you doing here?

ELEANOR

Hannah! How nice to see my dear sister here! I got a bit bored at home, so I thought I would drop by and—

HANNAH

How did you get out—

ELEANOR

Magic.

HANNAH

What—

ATHERTON *enters audience left and pulls HANNAH aside.*

ATHERTON

(*To HANNAH.*) Excuse me, Lady Hamilton. (*To ELEANOR.*) What is your name, my dear lady?

ELEANOR

Eleanor Hamilton, my lord. Second daughter of Sir David Hamilton.

ATHERTON

But Sir Hamilton only has one child—

ATHERTON looks back at HANNAH, confused. ELEANOR pulls him off audience right. HANNAH angrily exits audience left. SUNSET smiles bitterly.

1.3 - A Boy, A Girl

HANNAH enters audience right walks on the balcony. PENEPEPE starts conducting the band with a piece of chalk.

HANNAH

You're not dancing, Sir Sunset?

SUNSET

What— Lady Hamilton! No, I'm not. No. (*Pause.*) Would you like a drink?

SUNSET offers HANNAH his other glass. She takes it and starts sipping it and leaning on the railing.

HANNAH

Thank you, my lord.

SUNSET

Please, no titles, my lady. The Academy has not granted me one yet.

HANNAH

Sorry, Mister Sunset. Somehow I thought you were of noble birth, since you're so close to Lord Atherton.

SUNSET

No, I was not. I'm an orphan, and I was sent to the nobles' schools only because they thought I was brilliant.

HANNAH

I'm sorry to hear that.

SUNSET

Lady Hamilton, you're not dancing either?

HANNAH

No, I'm not. I can't seem to find a partner.

SUNSET

Oh. (*Pause.*) How is Sir Hamilton, is he well? I wonder when he would arrive—this party is held in his honor after all.

HANNAH

Father said he would be late. Tell me, Mister Sunset, do you know anything about that girl Lord Atherton was talking to? I don't seem to remember her face.

SUNSET

Sorry, I don't know her name either. I just— Nevermind.

HANNAH

Mister Sunset? Please, I would like to know more.

SUNSET

I'm sorry, but I don't think I should say any more on the subject.

HANNAH wraps her arm around his waist and leans in closer.

PENEPEPE finishes conducting a song.

SUNSET

The song's finished, Lady Hamilton, maybe you would be able to find a suitable partner during the switch?

HANNAH unhands SUNSET and starts to leave the balcony. Someone approaches PENEPEPE, who steps aside for a moment. She returns.

PENEPEPE

Ladies and gentlemen; scholars, noblemen and ladies; I have grave news to report! Sir David Hamilton has just died in his home!

SUNSET places his arm around HANNAH's shoulder. She brushes it off. PENEPEPE starts conducting the band again in an energetic manner. Lights fade on the balcony. SUNSET and HANNAH exit audience right.

1.** - The Roll of Initiative

SUNSET and HANNAH enter audience left.

SUNSET

I can't lead. It doesn't work. And believe me, I tried—and failed. Now, the problem is, if I want to dance, I have to lead. Observe, for example, the girl over there. Smart, beautiful, isn't afraid to take charge and take matters into her own hands. Does she want to dance with me? Probably. Does she take the initiative? No. Fine. (*To HANNAH.*) Would you like to dance?

HANNAH

Of course!

HANNAH *gets into position for a dance.* SUNSET *stands there, frozen.* HANNAH, *being impatient, nudges him.*

HANNAH

Aren't you going to do something?

SUNSET

Could you lead this dance?

HANNAH *looks at SUNSET quizzically.*

HANNAH

But you're the gentleman.

PENEPEPEPE *enters stage left with two barstools. She then places them down and draws her bar.*

SUNSET

I know.

HANNAH

If you weren't going to lead, why did you ask me to dance?

SUNSET

Because you weren't going to—

HANNAH

Forget it.

HANNAH *exits.* SUNSET *watches HANNAH, and then walks over to the stage right bar stool. He sits down and PENEPEPEPE stops drawing her bar to hand him a drink. She then resumes her setup.*

1.4 - Breakfast at Penelope's

SUNSET *is talking to someone to the right of him.* ELEANOR *enters into her bar from stage left. She sits down next to him and starts observing him.*

SUNSET

So I thought everything was fine, but then something just didn't seem right. So then I took the third derivative, and there, the zeros didn't match up with what I thought they'd match up with. I mean, I'm glad that I caught it but man, three days of work down the drain. (*He takes a swig of his drink. The person he is talking to winks and nudges his head to indicate that a female is looking at him from behind.*) Hmm? What— Oh, Lady Hamilton!

ELEANOR

Eleanor. Drop the titles, please. You look familiar.

SUNSET

Sunset.

ELEANOR

Right, you're Atherton's lackey—I mean, assistant.

SUNSET

Well, you're right on both counts.

PENEPEPE

So, what will the lady have?

ELEANOR

I'll have one of whatever he's having.

PENEPEPE *draws a beer tap and fills a drink.*

SUNSET

I have better taste than I thought.

ELEANOR

Actually, I just never drank before.

SUNSET

Oh. Then—

ELEANOR

I think I can handle it.

SUNSET

Sure. Out of curiosity, why did you come here?

ELEANOR

I found the address in Atherton's coat pocket. I guess he comes here a lot.

SUNSET

He does. Most people in our circle do.

ELEANOR

Yeah, I'm gathering that.

ELEANOR's drink arrives. She picks it up and SUNSET offers a toast.

SUNSET

Well, Eleanor, welcome to $\mathbb{P}^2(\mathbb{C})$.

ELEANOR

$\mathbb{P}^2(\mathbb{C})$?

SUNSET

Penepepe's Place of Bold Concoctions, our official watering hole.

ELEANOR

Cute. I like that.

SUNSET

Sometimes also known as the place with the bar at infinity.

*ELEANOR pauses, gets the joke, and laughs. They then toast and
ELEANOR takes a drink.*

SUNSET

How is it?

ELEANOR

I like it.

SUNSET

Not many people do.

ELEANOR

I'm a strange person.

SUNSET

That's not necessarily a bad thing.

ELEANOR

Do you come here often?

SUNSET

I do. Most of the people who frequent here work or study at the Academy,
so we know each other quite well.

ELEANOR

So this is where Father got his daily ale.

SUNSET

I beg your pardon?

ELEANOR

Oh, he used to go out drinking every night and come back smelling like bad ale.

SUNSET

That's odd, I never actually saw him here.

ELEANOR

Maybe it's a place that only the pure at heart can find.

SUNSET

Maybe. So, when he drank, did he—

ELEANOR

No, no. He didn't beat me or anything. He just gets less... articulate... about what he wants me to write. (*Uncomfortable pause.*) So, it feels like this ought to be a friendlier place.

SUNSET

It usually is.

ELEANOR

But I'm here.

SUNSET

Yeah. I guess they're just not used to Atherton's fiancé drinking ale in a dark basement with them.

ELEANOR

It's more than that. They don't just look uncomfortable. I don't think they like me.

SUNSET

I'm sure—Well, if you were one of them wouldn't you be uncomfortable when you realize that the cute girl at the bar is better than you in everything you do. No offense.

ELEANOR

None taken. Cute is not an offensive word. I wonder if they had a problem with Atherton.

SUNSET

They used to be wary of Atherton. After all, he's a prince as well as a genius. But that changed after he bought several rounds for everyone and started singing off-key with those guys at the back tables there.

ELEANOR

I wonder how many rounds I'll have to buy them before they like me.

SUNSET

It probably won't work. They'll just think you're using Atherton's money.

ELEANOR

Are you uncomfortable with me here?

SUNSET

Actually. No. I like talking to you.

ELEANOR

Thank you. Since everyone knows who I am, I guess asking you not to tell Atherton that I came here would be pointless.

SUNSET

I beg your pardon?

ELEANOR

If he found out I was here, he'll probably give me a lecture on how a proper lady does not drink ale in a basement with her friends. And then he'll tell me how much he loves me and how I should do whatever makes me happy, as long as it doesn't involve drinking in dark bars or walking around and exploring a city I haven't seen for a decade.

SUNSET

That sounds like him. Don't worry, I'll take the blame if he comes down on you.

ELEANOR

He's not doing anything like that until the wedding's over. Did I make you blush?

SUNSET

(She did.) It's the drink, I think.

ELEANOR looks at the clock on the wall—drawn by PENEPEPE right before ELEANOR looks at it—and notices the time.

ELEANOR

Time to go.

SUNSET

But it's not even close to midnight!

ELEANOR

I know. My curfew is nine-thirty. (*She stands up.*) It's nice having friends.

SUNSET

For someone who's only been interacting with two people for half her life, you've got great social skills.

ELEANOR

Trust me—it takes skill to deal with that sister of mine. Besides, I have some imaginary friends.

ELEANOR *downs the rest of her drink and begins to exit the bar.*

SUNSET

Have a safe trip home, Eleanor.

ELEANOR

Call me Ellie.

ELEANOR *exits stage left.* SUNSET *takes another drink and then exits.* PENEPEPE *takes a look around, writes $\mathbb{P}^2(\mathbb{C})$ on the floor, and then closes up shop.*

1.5 - A Young Woman's Game

ELEANOR *enters ATHERTON's living room from stage right. She draws some cushions on the ground and sits on them. She starts drawing a diagram of $\mathbb{P}^2(\mathbb{R})$ on the floor to her right. After she's done, she starts to homogenize several polynomials of two variables.*

ATHERTON

Good morning, Sweetheart! Is breakfast ready?

ELEANOR

Was I supposed to cook breakfast?

ATHERTON

I thought—

ELEANOR

Oops.

ATHERTON

No matter! I can pick up an éclair on the way to work.

ELEANOR

That's good.

ATHERTON

What are you doing?

ELEANOR

Writing.

ATHERTON takes a look at what she is writing. He wraps his arms around her and places his hands on hers.

ATHERTON

Eleanor dear, can I talk to you for a moment?

ELEANOR

Certainly.

ATHERTON

Remember what we talked about last week, after I asked you to marry me? You don't have to do this anymore.

ELEANOR

I know—

ATHERTON

Ellie, you've written enough. You've suffered too much already. I want to make it up to you.

ELEANOR

But I'm not suffering—

ATHERTON

Not a word, Eleanor. I want you to spend your days comfortably shopping, golfing, or doing whatever else you feel like. I'll do all the work around here. That bastard locked you up in an attic and made you write for him for years. I'm not going to let you exhaust yourself anymore. All right?

ELEANOR

Atherton, I—

ATHERTON

Ellie?

ELEANOR

Yes dear. Fine. Whatever you say.

ATHERTON

Good. Well, I better get to work. It's going to be a long day. Anyway, what's for dinner?

ELEANOR

You mean our chef's not cooking tonight?

ATHERTON

I would love to taste my wife's cooking some time.

ELEANOR

Wait, do you expect me to cook?

ATHERTON

Yes. Is there a problem?

ELEANOR

I don't know how to cook.

ATHERTON

Of course you know how to cook. Every girl learns that—

ELEANOR

See, there's that whole being locked up in an attic for a decade thing.

ATHERTON

Oh, right.

ELEANOR

Don't you have work to do?

ATHERTON

Right. Work. I should be leaving now. (*He notices the diagram on the floor.*)
What—

ELEANOR

The last page of the paper you're editing has some errors. I'm redoing the math.

ATHERTON

I could do that. You don't—

ELEANOR

You're welcome. Well, I guess I'll pack my papers and go buy some cook-books.

ATHERTON

You do that. I really should go to work now.

ATHERTON tries to kiss ELEANOR on the forehead. She places her hand on his cheek before he does.

ELEANOR

Atherton, go to work.

ELEANOR pushes ATHERTON aside. He exits audience left. ELEANOR smirks, and then proceeds to continue working on her paper. HANNAH enters stage left. She proceeds to mop a rectangle on the floor where ELEANOR was in the beginning.

HANNAH

Yes, sir. He told me to leave the house first. He said that he had something to finish up first. Poison? No, sir, I'm not aware. The doctor told me that it was a heart failure. Oh, it was an overdose that mimics the symptoms? I didn't know something like that existed. I don't think he had any enemies. His colleagues seem to respect him, though they may be secretly jealous of him. Yes, I was aware of Eleanor's situation. I kept silent because Father threatened to kill me. Yes, sir, he did. When we were young, he gave her a severe beating and told me that he would do that to me if I told anyone about Eleanor. Ever since our mother died. About ten years ago. He said that I was his favorite child. I think I was more useful to him as a motherless child who could get people to sympathize with him, or the pretty girl that tags behind him.

ATHERTON enters.

HANNAH

Kind of like a cover for Ellie. She's the smart one. She was the one he really needed. Maybe. I don't know. He was alone with her the night before and slept in the attic.

ATHERTON

Eleanor?

HANNAH

I think he wanted to go over the details of his—her—paper with her before the presentation.

ELEANOR

(Not looking up at him.) Did you forget something?

HANNAH

It's possible, I don't know. But... Honestly?

ATHERTON

Honey, there are some soldiers outside looking for you.

HANNAH

Yes, sir. I think she has good reason to kill Father.

End of act one.

Darkness Darkness

Lights up to reveal ELEANOR on the ground, inside the cage made by the mopping of HANNAH. She is curled up on the floor. Her head is on PENEPEPE's lap, and she now has her blanket over her again. HANNAH is sitting on the stage left stool in the bar, AHERTON is leaning against a pole and SUNSET is standing on the balcony. They are all looking at ELEANOR.

ELEANOR

I'm not hiding. I just want to take a little nap here. I won't hide. (*Pause.*) The floor, it's so comforting. Even when everyone and everything fail me, it's still here. People have weaknesses. But not cold slate. It's beautiful. It's my friend.

PENEPEPE gives ELEANOR a kiss on the forehead. ELEANOR continues to sink into the floor.

PENEPEPE

The empty set is the set that contains nothing. The set that contains the empty set is the set that contains the set that contains nothing. The empty set is not the set that contains the empty set but the set that contains the empty set contains the empty set. Though the empty set doesn't contain anything, including the set that contains the empty set. Of course there's the set that contains the set that contains the empty set, which doesn't actually contain the empty set, because it only contains the set that contains the empty set. And further down that chain we get the set that contains the set that contains the set that contains the empty set, and so on and so forth until the cows come home. But we don't have any cows so the set of cows is the empty set which means that they cannot come home. So really these sets go on and on without stopping. There are infinitely many of them and every single one of them is different and they are the fundamental foundation of everything. So the next time you feel empty inside, think about what I just said. You're not a beautiful and unique snowflake, but you're like one up to a metaphor. Isn't that good enough?

Act II: A Tale of Logic

2.1 - Faith of Our Daughters

PENEPEPE *enters the bar by walking downstage around it.* HANNAH *is sitting at the bar and too occupied with the emptiness around her to notice PENEPEPE.*

PENEPEPE

So what will the lady have?

HANNAH

I don't know.

PENEPEPE

Coming right up.

PENEPEPE *goes behind the bar to produce a drink of a dubious color.*

HANNAH

Say, what is this place? I've never noticed it before.

PENEPEPE

Not many do. Most of my customers are regulars.

HANNAH

Quiet night.

PENEPEPE *hands the drink to HANNAH.*

PENEPEPE

Thanks to you, your sister's being arrested. It seems that my customers are more concerned with that than alcohol tonight.

HANNAH

How did you—

PENEPEPE

I'm a bartender. Bartenders know everything.

HANNAH

You can't possibly know everything.

PENEPEPE

I have the power of ale, Hannah. It's almost as powerful as a magical truth potion—though most alcohol taste slightly better and contain fewer eyes of newt.

HANNAH almost spits out her drink. She then inspects it carefully, sniffs it, and drinks another sip.

PENEPEPE

Why would I lie? Ale is one of the most powerful things in the world. It pulls someone out from the real plane of existence and into a much, much bigger place. Once they're drunk, I go in from an angle that he's not familiar with with respect to going in, and I pull out more stuff from him than he thought he had.

HANNAH

And how do you do that?

PENEPEPE

Magic! Or is it a sequence of logical deductions performed upon their drunken banter? Hannah, which one do you think it is? Now, of course, you can't

really answer that since you don't really know what it is. Your feeling is the only thing that guides your answer. So, Hannah, how do you feel?

HANNAH

Neither.

PENEPEPE

Neither?

HANNAH

I don't believe in either of them.

PENEPEPE

Really? That's new. Tell me more.

HANNAH finishes off her drink.

HANNAH

If you know everything, then you know exactly what happened to Father that night, right?

PENEPEPE

Yes, I do. He died.

PENEPEPE smiles takes HANNAH's drink. She then exits stage left. HANNAH closes herself up in the chair.

2.* - A Quotient of Ideals

ELEANOR gets up and finds herself locked in a cage again. She notices that she, once again, has her blanket from before. With nothing else to do, she wraps the blanket around her, sits down, takes out a piece chalk, and proceeds to prove a theorem.

2.2 - Where Magic Meets Logic

PENEPEPE *enters into ELEANOR's holding cell from stage left and stands next to ELEANOR.*

PENEPEPE

Miss Hamilton? (*Silence.*) Eleanor? Ellie?

ELEANOR

What do you want?

PENEPEPE

I'm your lawyer.

ELEANOR *turns and notices that her lawyer is PENEPEPE.*

ELEANOR

Penepepe? Weren't you a fairy godmother? What happened to your wings?

PENEPEPE

Well, obviously they don't fit inside the jacket, darling. I could cut holes for them in the back but why ruin a nice suit when you don't have to?

ELEANOR

So are you here to bust me out of jail with your magical wand?

PENEPEPE

No, I'm your lawyer.

ELEANOR

I beg your pardon?

PENEPEPE

I'm here to defend you—in court.

ELEANOR

Why not just cart me off in a giant fruitcake?

PENEPEPE

Oh you kids think just because I'm a fairy I can do everything—

ELEANOR

Then why call what you do magic? Why did you even bother whisking me out of that forsaken attic? Just so you can toy with me and laugh at me when I get locked up in a slightly smellier cell?

PENEPEPE

Everything has a price, Ellie. When you take something away from the world, you have to add something back to it. Magic can't change reality, it can only change the way you look at it.

ELEANOR

Then why do you even bother?

PENEPEPE

Why do you bother?

ELEANOR

Excuse me?

PENEPEPE

Every bit of mathematics is just a rearrangement of what you think is truth. No matter what you do to your axioms and theorems you don't change anything. Maybe at the end of the day you see something you may not have seen before, but the world would still spin the same way. Nothing changes, so why do you do it?

ELEANOR

Because—

PENEPEPE *pulls the blanket out from underneath* ELEANOR.

PENEPEPE

In order to really understand this world, sometimes you have to add onto it some things imaginary—abstractions of the impossible and things that have no grounding in truth have to be considered. That's where the magic happens. But unless you want to spend the rest of your life in a world that's mostly the product of your mind, you'll have to find a way to tear it all down and travel back to reality. Maybe it's a slightly different looking reality, but it's still the same thing as before.

ELEANOR *sits frozen. PENEPEPE drops the blanket on her head and exits stage left.*

2.3 - I Can Kill You With My Brain

HANNAH *gets out of her chair and approaches* ELEANOR. *She lifts the blanket off of* ELEANOR's head.

HANNAH

Ellie, why did you do it?

ELEANOR

Excuse me?

HANNAH

I know Father was being horrible to you, but you didn't have to kill him.

ELEANOR

Are you trying to get me to admit doing something that I didn't do?

HANNAH

You don't have to lie to me, Ellie. Nobody else is here. Nobody can listen in. I made sure of that.

ELEANOR

By poisoning them? Or by promising to sleep with them?

HANNAH

You wound me, dear sister. Why do you hate me?

ELEANOR

You have everything that I don't.

HANNAH

Is that it?

ELEANOR

No, Hannah, it isn't. The second father died, the second I can have something to my name, you try to take it away. My freedom, my work, my Atherton—

HANNAH

Are you really in love with Atherton, Ellie?

ELEANOR

Yes— Maybe. Do you really love him?

HANNAH

Does he really love either of us?

ELEANOR

Don't you change the subject! While you were growing up like a proper lady I was locked up in the attic, deprived of food and light and air and everything you take for granted because he likes you better—

HANNAH

You think I was his favorite child? (*Pause.*) Yes, I slept in the best bed of the house. I wore the best dresses he could find. He took me out to dances while you're locked up and working. But why do you think I slept on Mother's bed and wore her clothes?

ELEANOR *stops writing.*

HANNAH

We were both lying to the world, Eleanor. You told them your work was his, and I told them my body was mine.

ELEANOR

Hannah—

HANNAH

Ask yourself, Ellie, do you really want to live my life? You know what it's like being attached to someone. How many people besides me call you Eleanor? You are—were—"Atherton's new girlfriend". My name isn't Hannah. It's "Hamilton's daughter". And you know what, they're right, because up until the point that he died and you appeared I was his. Ellie, if anything, I should be jealous of you.

ELEANOR

Do you hate him?

HANNAH

Yes— Maybe.

ELEANOR

Then forget about him. He's dead.

HANNAH

I can't. I know but I can't get away. Sometimes at night I want to be in his arms again—it's the only thing warm I've ever felt in my life. I want someone to pretend to love me again, Ellie. It's wrong, but it's the only thing on my mind. (*Pause.*) I will take Atherton from you, Ellie. I don't care what the truth is—I'm going to keep telling him that you're a murderous bitch. When he realizes that he can never have you he will come find me because I'm the next best thing.

ELEANOR

What exactly happened to Father that night?

HANNAH

He died.

ELEANOR

I didn't kill him.

HANNAH

Neither did I. (*Pause.*) I think he loved us—in his own way—even while he was dying. After all, love is nothing but beautiful words hiding the desire to completely possess someone.

HANNAH exits stage left. ELEANOR takes a pause, and then continues to write on the ground.

2.** - Killing Term

SUNSET enters audience left, sits on the floor and starts drawing and crossing out meaningless things.

SUNSET

When I'm frustrated I sit at my desk and try to prove a theorem. Mathematics calms me. Most people I know don't seem to share this view. If they had tried doing this they would get even more frustrated, since whatever was bothering them would make them lose focus on their work, which in turn frustrates them more. When people like them get frustrated, they curse the world at the top of their lungs, send their boot flying a poor servant, or just hop down to the local brothel. Mathematics calms me. I could vent all my frustration at my work and it wouldn't mind. The law would let me slash out my anger at terms that aren't really there, like an x that appears on both sides of an equation. Or I could replace something that offends me with something much simpler. Or I could construct complex yet elegant sets

by taking another and slicing off rough edges and corners. And no matter what I annihilate—what I destroy—it can't fight back as long as I'm doing it in a cold, logical way. Nobody's going to yell "save the constants" and throw a brick through my window while I take its derivative, forcing it to become zero. Sometimes when I'm sculpting these objects I imagine myself as a surgeon, carefully cutting out the diseased tissue that doesn't belong. Sometimes I would be separating whole sections of a sequence or slaughtering a family of monomials with my blade—always with the precision and grace of perfection. When one of my colleagues found out that his girlfriend had found another man while he was off to war, he challenged the man to a duel and they both ended up dead. I wouldn't do that. I would turn my anger and fear and insecurities into the essence of my work. My sword is not a rapier, it's a fine edge that slowly chisels. It doesn't fight for avarice, envy or lust; it fights to carve new things in the world that nobody can take away from me.

SUNSET *wipes his drawing out with her foot, and then exits stage right.*

2.4 - The Boundary of a Boundary

ATHERTON *enters into his office from audience right.* PENEPEPE *enters audience left.*

ATHERTON

What's your point, consul Penepepe?

PENEPEPE

You don't actually have any proof who did it, do you?

ATHERTON

No, though Ellie—Eleanor—is the only one with a motive.

PENEPEPE

But you have no proof, do you? Besides, what's preventing Hannah from lying?

ATHERTON

Nothing.

PENEPEPE

You don't believe that she did it.

ATHERTON

I don't know. Maybe she did it. But maybe she didn't. This murder takes a lot of planning, and the execution was flawless.

PENEPEPE

Almost like magic.

ATHERTON

Yes. And there's also the issue of how she got out. The most logical explanation would be she killed her father and took his keys. But her official statement says "magic", which just doesn't make sense.

PENEPEPE

That depends on if you believe in this "magic".

ATHERTON

It doesn't matter what I think. Even without solid proof I need a conclusion. The Council demands it. People demand justice. They demand the execution of the law.

PENEPEPE

But you don't want to execute Eleanor.

ATHERTON

Off the record, no. Personally, I think some people just want to get rid of her. There are definitely people—some with a great deal of influence—who'd die before letting a little girl have her name written in the history books for something that they could never do.

PENEPEPE

People like you.

ATHERTON

Let me inform you, consul, that I intend to edit and publish her paper under her name no matter what the outcome of this ordeal is. She did the work, she proved that she is in fact the only one who could have done the work, and she will have her name attached to it. I will see it through that she gets her credit and fame regardless of what my feelings on the subject are.

PENEPEPE

Have you talked to Eleanor ever since she was arrested?

ATHERTON

No. It would be inappropriate, especially now that our engagement's broken by my father. Talking to her is your duty.

PENEPEPE

What if I tell you that she's willing to leave the kingdom—for a while, maybe a few years, or a decade?

ATHERTON

Excuse me?

PENEPEPE

You need to get rid of her, but you don't want to—nor do you have the evidence to—execute her. So how about a compromise? On paper, you exile her. In reality, she leaves on a trip to travel the world, learning and teaching new things to others. And once the fires die down you can pardon her, she

would come back not as a criminal but a celebrated scholar, and you then ask her to marry you again.

ATHERTON

Are you sure it'll work?

PENEPEPE

Of course! “Exile in place of execution; leaving the protagonist time to regroup and return.” It’s a standard trick I learned in graduate school.

Lights fade, and they both exit from audience right.

2.*** - Ain't That The Truth?

ELEANOR is released by a jail guard. She takes one last look at her cell, and then resolves to move on. During this scene she folds her blanket.

ELEANOR

I think I have a new goal in life. I’m going to be a tautologist—everything I say is right. I’ll wear a fancy suit and then take trivially true statements and put some truth-preserving salad dressing on it and sell it to people for large amounts of money. And when someone accuses me of lying, I’ll just say “it’s identically equivalent to A implies A , bitch!”. You know, the world pays good money for tautologists these days.

ELEANOR places the folded blanket in the middle of her cell and exits stage left.

2.5 - God Save The Constants

HANNAH enters stage right with a mop and approaches what used to be the living room.

HANNAH

Why do you haunt me, Ellie? Why do you insist on being here even after you're gone? Why did you leave me these meaningless symbols? I'm not you, and I'll never be like you. I need more than scribbles on a chalkboard to make me happy. I can't find my answers like you, writing endlessly on a sheet of paper until some magical moment of truth appears. I want to feel the touch of someone, Ellie. Everyone only cares about that world inside your heads. You, Father, Sunset, Penepepe—even Atherton thinks about his land like some abstract toy. All you would think about is some magical, imaginary place with your functions and diagrams. Why don't you ever slow down and just live in the normal world for a while? Why don't you think about me, or all those other people who can't live on the other side of the wall?

HANNAH *slashes out at the diagram of $\mathbb{P}^2(\mathbb{C})$.*

HANNAH

I'm cold, Eleanor, and your x 's and y 's and mathematical pixie dust don't do anything for me—even if I set them all on fire.

HANNAH *strikes the floor with her mop, and leans her weight on it.*

2.6 - Never Close Enough For Comfort

PENEPEPE *enters stage left and starts managing the bar.* SUNSET *enters stages left and sits down.* PENEPEPE *hands him his drink as soon as he sits.* HANNAH *collapses on the floor.*

SUNSET

I saw her the night before she left, in her room, with the bottle of '37 that I was saving for my graduation. It wasn't strong, or bitter. It tasted nice—sweet, even. I asked her if I could go with her—if she needed someone to tag along, you know, tend the horses, chop the firewood, read her poetry at night, that soft of thing. That was the twenty-seventh rejection in my life. (*He takes a drink.*) Then I told her that I love her. She told me that she didn't believe in love. Rejection the twenty-eighth.

ATHERTON *enters and sits next to SUNSET. Similar to SUNSET's case, his drink arrives as soon as he sits down. SUNSET is not aware of this.*

SUNSET

She took a swig of the bottle, then she gave me the queerest speech on love I've ever heard. She told me that to be in love is to be as close to someone else as possible without actually being that person.

ATHERTON

And that's literally impossible, because no matter how close two people get they are never close enough. At some point they're going to either die or tell each other to fuck off, so they're never going to get closer than $\frac{1}{n}$ for some positive integer n . And that, to our dear Eleanor, is not close enough.

SUNSET

How did—

ATHERTON

Rejection the first.

SUNSET

Does it count as rejection if it happens after you're engaged?

ATHERTON

Maybe. Someone more coherent than you can figure that out.

SUNSET

What about her sister? The one you claimed you loved dearly before Ellie showed up?

ATHERTON

I do love her. But she reminds me too much of Ellie, and I don't think I can deal with it now.

SUNSET

That's a lie. She's nothing like Ellie.

ATHERTON

You're right. Even when Ellie only pretended to love me, I felt comfortable around her. But no matter how close I get to Hannah she still seems so far away. (*He takes a drink.*) Let's stop talking about women. They're more time-consuming than they're worth. Take my advice: finish your dissertation before thinking any more about girls. Trust me, once you're done, women will flock to you. They love men with extra titles attached to their names.

SUNSET

Right. I believe you.

ATHERTON

I don't like that tone in your voice. You need to drink some more.

SUNSET

You just said I was drinking too much.

ATHERTON

And yet still not enough! That, my friend, is the paradox of ale. One that the greatest sages of the world cannot solve. Well, I propose a toast. A toast to our problems; a toast to the most brilliant and promising and beautiful woman we've ever known.

SUNSET

Still won't admit that she's smarter than you?

ATHERTON

Maybe after another drink. To Eleanor Hamilton?

SUNSET

Cheers! To Ellie!

They toast, and freeze for the remainder of the scene.

PENEPEPE *walks over to* HANNAH.

PENEPEPE

Hannah dear, you've had entirely too much to drink.

HANNAH

The floor, it's so comforting. Even when everyone and everything fail me, it's still here. It won't be scared if I tell it my heart's desires. It won't call me a lying whore and then dismiss me like the lying whore I am. It won't ask for anything when I just want it to hold me—and it smells like bad ale. I like the floor.

PENEPEPE

You have suffered much, poor Hannah! But don't worry, I'm a fairy god-mother and I can make your wish come true. You'll still have to work hard, but I can at least give you another chance to see what's already there.

HANNAH

Will you make my dreams come true?

PENEPEPE

If you pay the price, yes.

HANNAH

How much for a handsome prince who's good in bed?

PENEPEPE

Less than you would think, darling.

HANNAH

But what about the cuddles? I want the cuddles too. And the kisses on the forehead? And the not sleeping with every pleasant girl he sees? And—

PENEPEPE

We'll work on those later—say, after you settled your bar tab.

PENEPEPE gives HANNAH a kiss on the forehead. Lights fade and they all exit.

The Edges That Remain

ELEANOR *enters stage right and goes to the podium where ATHER-
TON gave his lecture in the beginning.*

ELEANOR

Five objects. Five factories. Five cities in a small country to the east. Five stars where the fairies roam. Five people connected to each other by fate. Five points of a graph in complete symmetry. No matter how you do it, as soon as you start removing an edge—a link—between any two of them, the edges that remain stand out as something that’s injured—incomplete. The beauty of completeness will forever be gone. It would no longer be the simple, flawless gem that we understand completely. We live our lives in a world where things can be flawed. Our theories can only capture so much before it breaks down. This isn’t a storybook—where the princess always marries the prince and the evil witch gets what he deserves. Sometimes there just isn’t a happy ending, where undying love or inescapable justice conquers all. Things fall apart, and we’ll just have to make do with whatever the fallout leaves us.

ELEANOR

But the reason I’m here today is to talk about the perfectly structured world of mathematics—a place where axioms serve as Tradition and logic its honor guard. For the next hour or so, I ask you to join me in this world that we have created—that we will create together. Immerse yourself in this theatre of operators and variables, relax, and appreciate the beauty that is mathematics. So, without further ado, here’s our first definition:

ELEANOR *turns around and lifts her chalk as if she was about to
write on a chalkboard. Blackout. End of play.*