Squaring the Circle

Definition 1: Squaring the Circle is the proven impossible task of constructing the square of the same area as a circle using only a finite number of steps with a compass and straight edge.

Definition 2: Squaring the Circle is also mathematical slang for an encitingly difficult challenge, which may or may not be possible.

Theorem 1: Squaring the Circle is a game which merges the genres of academic mathematics and thieves on high risk heists.
Proof : In Squaring the Circle you choose a branch of mathematics and a type of thief, joining them together to build your mathematician. As top mathematicians you are routinely invited to various conferences all over the world. But simply exploring non-trivial consequences of the full Taniyama-Shimura conjecture isn't enough for you and your colleagues. Sometimes you want to relax by tackling seemingly impossible jobs, like stealing the crown jewels, seducing the head of the national bank, or bankrupting a vicious and powerful CEO. These are *open problems*, and you and your colleagues will work together and at odds to achieve these squarings of circles.

Theorem 2: Squaring the Circle is powered by the *Apocalypse World* engine. It is built around a series of *moves*, self-contained mechanics which are linked to fictional situations.
Proof : See Vincent Baker's *Apocalypse World*

Definition 3: When dice are rolled in Squaring the Circle it is describe as "roll **+**X". Always roll two six-sided dice and add them together, plus whatever stat or value is indicated by "X", in addition to any other modifiers from past moves. If that total is **7** or higher, it is a hit. A **10** or more is especially good, while a **7-9** often produces a mixed result. Lastly, a **6** or below on the total, indicates a miss, where something bad can happen.

Aside: Squaring the Circle has been designed by Mendel Schmiedekamp.

Theorem 3: Squaring the Circle is played without a Master of Ceremonies.
Proof : As you play Squaring the Circle, you will state theorems which can lead to solving the open problems you have decided to attempt. To prove these theorems and thus achieve their goals, you must achieve *results*, actions in the story which support the goal of the theorem you are proving. The moves for creating theorems and proving them determine how you fair in your attempts to prove a theorem. When you encounter trouble it comes in the form of Complications, Antagonists, Risks, or Debts (CARDs). These form a House of CARDs, for both mathematicians and theorems. These Houses describe all the trouble that your mathematicians is juggling, and if they fall down all of their CARDs come due. Together theorems provide a way to achieve the seemingly impossible and Houses of CARDs provide the threat and rewards of that challenge. A game of Squaring the Circle is the interplay between these two forces with your mathematicians right in the middle.

Theorem 4: To play a game of Squaring the Circle, you create mathematicians by joining a Mathematician playbook with a Thief playbook, selecting among your options on each sheet. Then choose, perhaps randomly, a guest of honor and begin your first a conference.
Proof : An exercise for the reader.

Mathematician

Set Theorist

Ukrainian, Californian, Angolan, or Kazakh

Stats

Assign +2, +1, -1.

◇ Creative

◇ Elegant

◇ Rigorous

Set Theory Moves:

○ **Non-Wellfoundedness**: Using flashbacks or flashforwards, you may apply an unproven theorem to prove a different theorem. If a theorem's result is disproved, it gets **+3** need. A theorem cannot solve an open problem if it has an unproven result.

○ **Axiom of Choice**: When you state a theorem, you can give it **+1** need to make it a proof by induction.

○ **Cardinality Tricks**: Once things get big enough, more doesn't matter. Your minimum CARD modifier is **0**.

○ **Fuzzy Sets**: When you confuse and blur distinctions talking to someone, roll **+Sly**. On a hit use another move to follow-up and manipulate, at **+1** forward. On a 10+ confusion also leads to a result. On a miss, you have confused yourself, take the risk as a CARD.

Advancement

□□□ A Set Theory move
□ +1 Sly
□ +1 Elegant
□ +1 Rigorous
□ +1 Any Stat (max +2)
□ Gain a Gifted Student

Experience
→ ○ ○
○ ○ ○

□□□ A Wire move
□ +1 Sly
□ +1 Cold
□ +1 Elegant
□□ Another thief's core move
□□ Move from another playbook

○ ○ ○
○ ○ ↓
Advance

| -1 | -2 |

House of

Complications
Antagonists

CARDs

Risks
Debts

| +0 | |

↓

| +2 | +1 |

| +5 | +4 | +3 |

◇ Cold

◇ Hot

◇ Sly

Assign +2, +1, -1.

Wire

Look: Casual, Blending, Unkempt, or Subtle Style
Vice: Fandom, New Tech, Lust, Rage, or Obsession

Gain all Wire Core Moves and choose one other move.

Core Wire Moves:

● **Surveillance**: When you spy on someone, roll **+Cold**. On a 10+ hold 3, on a 7-9 hold 1. Spend hold to reveal one of their secrets, giving you **+1** on a move involving them. On a miss, they find out, take them as a CARD.

● **Bypass**: When you bypass security, roll **+Sly**. On a hit, get a result. On a 7-9 or a miss, your intrusion attempt is noticed, take this risk as a CARD.

● **Lose Control**: When you lash out or rush in, roll **+Hot**. On a hit, get a result. On a 7-9 or a miss, you need help, take that debt as a CARD.

Wire Moves:

○ **Watch the Competition**: When you plant a bug on a colleague, roll **+Sly**. On a 10+ hold 3, on a 7-9 hold 1. Spend 1 hold to interfere, giving her **+1** or **-2** on a move. On a miss, you are discovered, getting a CARD of her choice. This is a Conference move.

○ **Blackmail**: Spend 2 Surveillance hold to make your target follow instructions, as a result.

○ **I Have the Building**: When you Bypass, and get 10+, get a second result to apply to a different theorem.

○ **Spook Friends**: Your spy buddies do you favors. Spend Surveillance hold to Lose Control with agents or the authorities. *If you have 5 or more trophies, get this move:*

◐ **Spymaster**: If the open problem you select is espionage related and you solve it, *transcend,* becoming the secretive Master of Spies.

Colleagues

Trophies

Thief

Mathematician

Number Theorist   Name:

New Englander, Czech, Philippine, or Brazilian

Stats

Assign +2, +1, -1.

◇ Creative

◇ Elegant

◇ Rigorous
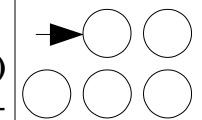
Number Theory Moves:

○ **Ramanujan's Notebooks**: When you dig into the past for a solution, roll **+Creative**. On a hit you make a discovery: use another move to follow-up at **+1 forward**. On a **10+**, you can use your discovery as a result to prove a theorem, but you risk your discovery being wrong and the theorem takes that as a CARD.

○ **Infinite Descent**: When you state a theorem, if you choose proof by induction it is a proof by contradiction for free.

○ **Codemaker**: Gain **+1** on any move where you encrypt or decrypt information.

○ **p-adic Perspective**: When a proof has a prime number of results needed, get **+1** to moves to prove or disprove it.

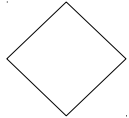○ **Combinatoric Chicanery**: When you select proof by exhaustion, it adds only 3 need.

Advancement

☐☐☐ A Number Theory move
☐ +1 Hot
☐ +1 Creative
☐ +1 Rigorous
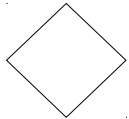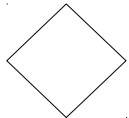☐ +1 Any Stat (max +2)
☐ Gain a Gifted Student

Experience
→ ○ ○
○ ○ ○

House of   CARDs

-1	-2

Complications   Risks
Antagonists   Debts

+0	

+2	+1

↓

+5	+4	+3

◇ Cold

◇ Hot

◇ Sly

Assign +2, +1, -1.

Bash

Look: Military, Rough, Professional, or Quiet

Vice: Competition, Rage, Cooking, Style, or Honor
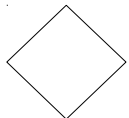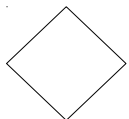
Gain all Bash Core Moves and choose one other move.

Core Bash Moves:

● **Oomph**: When you force your way through an obstacle, roll **+Hot**. On a hit, get in as a result. On a **7-9** or a miss, you have attracted trouble or made a mess, choose one as a CARD.

● **Intimidation**: When you threaten with violence, roll **+Cold**. On a **10+** get the response you want as a result. On a **7-9**, follow through to get a result, taking the aftermath as a CARD. On a miss, you are shaken-up.

● **Truth Will Bear**: When you confront with the truth, roll **+Sly**. On a hit they fold as a result. On a **7-9** or a miss, take their grudge as a CARD.

☐☐☐ A Bash move
☐ +1 Hot
☐ +1 Cold
☐ +1 Rigorous
☐☐ Another thief's core move
☐☐ Move from another playbook

○ ○ ○
○ ○ ↓
Advance

Bash Moves:

○ **Cold Read**: When you meet someone, you may guess their secrets, if so roll **+Cold**. On a **10+** say a truth they hold secret. On a **7-9** notice a weakness or vulnerability, giving **+1 forward**. On a miss, you are fascinated as a CARD.

○ **Precision**: When you Oomph, and get 7-9, you may avoid both CARD and result, and get **+1 forward**.

○ **Psy-Ops**: When you Intimidate, you can threaten with other means than violence. If you do roll **+Creative**, instead of **+Cold**.

○ **Wrecker**: When you disprove a theorem, any resulting CARD moves get -1, even yours.

If you have 5 or more trophies, get this move:

◐ **Master of Masters**: If the open problem you select is physically demanding and you solve it, *transcend,* retire to a remote dojo.

Colleagues

Trophies

Thief

Mathematician

Algebraist

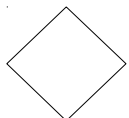Punjabi, Welsh, Texan, Korean, or Yemeni

Stats

Assign +2, +1, -1.

◇ Creative

◇ Elegant

◇ Rigorous

Algebra Moves:

○ **Monstrous Moonshine**: When you craft complex and subtle relationships between events, roll +Creative. On a 10+ hold 3, on a 7-9 hold 1. Spend hold 1 for 1 to transform a result into something completely different. On a miss, you risk making things too complex, as a CARD.

○ **Remember Galois**: Gain +1 on any move where you use a sword.

○ **Character Theory**: When you alter a group dynamic, roll +Elegant. On a hit gain a result, influencing them. On a 7-9 or miss, unintended effects give a CARD.

○ **Nilpotence**: You know how to make trouble cancel out. As a conference move, chat with a fellow colleague and cancel out one of your CARDs by canceling one of theirs, describing how they resolve each other, or at least keep each other occupied.

Advancement

- □ □ □ An Algebra move
- □ +1 Cold
- □ +1 Creative
- □ +1 Elegant
- □ +1 Any Stat (max +2)
- □ Gain a Gifted Student

Experience ○ ○ ○ ○

House of CARDs

Complications Antagonists

Risks Debts

-1	-2
+0	
+2	+1
+5	+4	+3

◇ Cold

◇ Hot

◇ Sly

Assign +2, +1, -1.

Grift

Look: Fancy, Unassuming, Professional, or Alluring

Vice: Love, Fashion, Egoism, or Reputation

Gain all Grift Core Moves and choose one other move.

Core Grift Moves:

● **Masquerade**: When you take on a false identity, roll +Sly. On a 10+ hold 3, on a 7-9 hold 1, spend hold to get +1 on a move in this identity. On a miss, you are exposed, as a CARD.

● **Trust Me**: When you exploit trust, roll +Cold. On a hit, they do what you want as a result. On a 7-9 or a miss, they turn on you, as a CARD.

● **Enticement**: When you seduce with your self or your ideas, roll +Hot. On a hit, they do what you want as a result. On a 7-9 or a miss, they show dangerous initiative, as a CARD.

- □ □ □ A Grift move
- □ +1 Hot
- □ +1 Sly
- □ +1 Creative
- □ □ Another thief's core move
- □ □ Move from another playbook

○ ○ ○
○ ○ ↓
Advance

Grift Moves:

○ **Assemble the Team**: As a conference move, assemble a team, roll +Hot. On a 10+ you assemble 4, on a 7-9, assemble 2. you can use any Core move through them, with a +1 the first time that teammate takes a move. On a miss a former teammate calls in a debt, as a CARD.

○ **Unflappable**: Get +1 to your CARD modifier.

○ **Best In People**: When you Entice to virtue, get +1 Masquerade hold.

○ **Worst In People**: When you Entice to vice, get +1 Masquerade hold.

○ **Honest Face**: In a first meeting, people trust you. *If you have 5 or more trophies, get this move:*

● **Perfect Impostor**: If the open problem you select involves false identities and you sol*ve it, tran*scend, becoming your new identity.

Colleagues

Trophies

Thief

Team

Mathematician

Name:

Geometer

Ecuadoran, Romanian, Libyan, or Taiwanese

Stats

Assign **+2**, **+1**, **-1**.
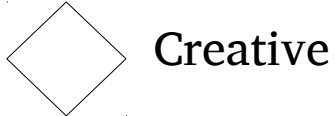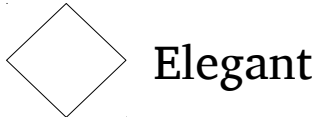
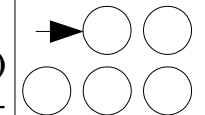- ◇ Creative
- ◇ Elegant
- ◇ Rigorous

Geometry Moves:

- ○ **Isometric Transformation**: When you scrap one of your theorems to create a new one, reference how your progress so far applies to your new goal. Keep the CARDs, options and need. Roll **+Elegant**, on a **10+** drop a CARD, on miss **+2** need.
- ○ **Euclid's Method**: Get **+1** forward when you draw or sketch as part of your move, as your thief or as a player.
- ○ **Parallel Postulate**: When you have stated two theorems to the same end and one has been disproved, reduce the need of the other by half (round down).
- ○ **Build the Tensor**: Your preparations are always in depth and multi-faceted. When you prove a theorem by construction, gain hold **5**, instead of hold **3**.
- ○ **Follow the Geodesic**: When you attempt to prove another's conjecture, get **+1**.

Advancement

- ☐☐☐ A Geometry move
- ☐ **+1** Sly
- ☐ **+1** Creative
- ☐ **+1** Rigorous
- ☐ **+1** Any Stat (max **+2**)
- ☐ Gain a Gifted Student

Experience ○○○ ○○○

- ☐☐☐ A Click move
- ☐ **+1** Cold
- ☐ **+1** Sly
- ☐ **+1** Elegant
- ☐☐ Another thief's core move
- ☐☐ Move from another playbook

○○○ ○○↓ **Advance**

House of CARDs

Complications
Antagonists

Risks
Debts

-1	-2
+0	
+2	**+1**
+5	**+4**	**+3**

Grift Moves:

- ○ **Menagerie**: As free move at the beginning of a conference, determine the trained animals you have available to aid you by rolling **+Sly**. On a **10+** you hold **3**, on a **7-9**, you hold **1**. You can spend **1** hold to have an animal perform its trick in place of an initial move to gain a result.

Menagerie

Thief

- ◇ Cold
- ◇ Hot
- ◇ Sly

Assign **+2**, **+1**, **-1**.

Click

Look: Rough, Leather, Stylish, or Prim & Proper
Vice: Control, Animals, Excess, or Revenge
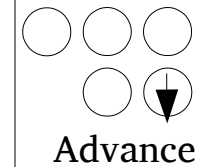
Gain all Click Core Moves and choose one other move.

Core Click Moves:

- ● **Conditioning**: When you covertly train a person to do your bidding, roll **+Sly**. On a hit, they do what you want, but on a **7-9** or a miss they realize you affected them, as a CARD.
- ● **Pecking Order**: When you observe a group hierarchy, roll **+Rigorous**, on a **10+** hold **3**, on a **7-9** hold **1**. Spend hold to get **+1** to manipulate members.
- ● **Get Rough**: When you roll up your sleeves and get dirty, roll **+Hot**. On a hit, you get the job done. On a **7-9** or a miss, you are exposed or exhausted in the effort, as a CARD.
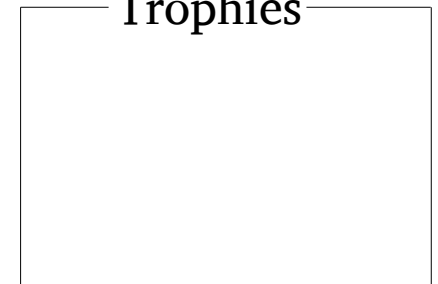
- ○ **Pack Alpha**: In a first meeting, people treat you as in charge.
- ○ **Programming**: Gain **+1** to prove a theorem about a person's behavior.
- ○ **Carrot**: Proving one of your conjectures marks **2** experience, instead of **1**.

If you have 5 or more trophies, get this move:

- ● **Hidden Mastermind**: If the open problem you select involves leverage over wealthy or powerful people and you solve it, *transcend,* becoming the power behind the throne.

Colleagues

Trophies

Mathematician

Dynamicist

Bengali, Malaysian, South African or French

Name:

Stats

Assign **+2, +1, -1.**

- ◇ Creative
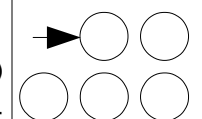- ◇ Elegant
- ◇ Rigorous

Dynamics Moves:

- ○ **Extreme Sensitivity to Initial Conditions**: When you flashback to reveal how you inserted chaos into the situation, as a conference move, roll **+Sly**. On a **10+** any number of theorems are shaken-up, on a **7-9** hold shake-up up to 3 theorems. On a miss, your chaos gives you a CARD.
- ○ **Strange Attractor**: Your theorems get **+1** to their CARD modifier.
- ○ **Control Theory**: When you roll **12+** on a **+CARD** roll on one of your theorems, reduce that theorem's need by **1**, as your strategies correct for these conditions.

○ **Metstability**: Disaster is just a less stable means to reach your goals. When your theorem is disproved, roll **+Creative**. On a hit, you can still prove it, its need is its number of CARDs, but, if it gets another CARD it's disproved. On **7-9**/miss, take one of its CARDs.

Advancement

- ☐☐☐ A Dynamics move
- ☐ +1 Hot
- ☐ +1 Creative
- ☐ +1 Elegant
- ☐ +1 Any Stat (max +2)
- ☐ Gain a Gifted Student

Experience
→ ○○
○○○

House of CARDs

Complications
Antagonists

Risks
Debts

-1	-2
+0	
+2	**+1**
+5	**+4**	**+3**

- ◇ Cold
- ◇ Hot
- ◇ Sly

Assign **+2, +1, -1.**

Phreak

Look: Punk, Goth, Nerd, Geek Chic, or Business
**Vice:** Curiosity, Old Tech, Pride, The Cause, or Greed

Gain all Phreak Core Moves and choose one other move.

Core Phreak Moves:

- ● **Digital Mayhem**: When you wreck or sabotage computers, roll **+Hot**. On a **10+** get a result. On a **7-9**, escalate the chaos to get a result and a CARD. On a miss, you are shaken-up.
- ● **Social Engineering**: When you trick into telling a secret, roll **+Sly**. On a hit, the secret is a result. On a **7-9** or a miss, they realize, as a CARD.
- ● **Turnabout**: When you reveal a contingency about a CARD on you or a theory, roll **+Cold**. On a hit, move this CARD to another house. On a **7-9** or a miss, you are shaken-up.

- ☐☐☐ A Phreak move
- ☐ +1 Sly
- ☐ +1 Hot
- ☐ +1 Creative
- ☐☐ Another thief's core move
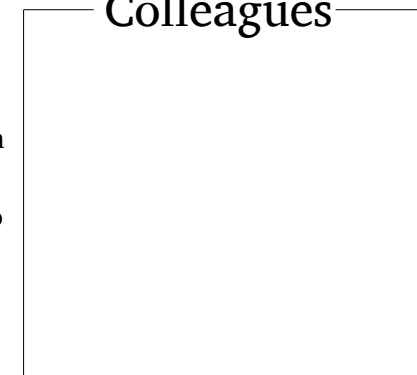- ☐☐ Move from another playbook

○○○
○○↓
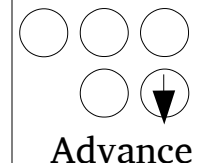
Advance

Phreak Moves:

- ○ **HQ**: If you prove a theorem about you having a base of operations in the conference city, you get **+1** forward for the rest of the conference when you work from that location. You lose your HQ if your house of CARDs falls
- ○ **Technobabble**: when you gain a CARD from Social Engineering, your target is too confused to react, don't roll **+CARD**.
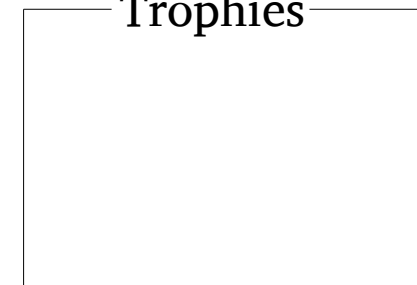
- ○ **Botnet**: Get **+1** to Digital Mayhem.
- ○ **Crowdsourcing**: When you state a conjecture, on a hit give an additional **+1** forward to attempts to state or prove theorems fulfilling that conjecture.
- ○ **I'm In IT**: In a first meeting, folks ignore you. *If you have 5 or more trophies, get this move:*
- ● **Code Legend**: If the open problem you select involves infiltrating computers and you solve it, *transcend,* becoming a legend of hacking.

Colleagues

Trophies

Thief

Mathematician

Analyst

Mexican, New Zealander, Congolese, or Japanese

Name:

-1   -2

Stats

Assign +2, +1, -1.

◇ Creative

◇ Elegant

◇ Rigorous

Analysis Moves:

○ **Basis Functions**: As a conference move you can attempt to expand the space of your capabilities. Choose a core move of another attendee and roll +Creative. On a **10+** hold 4, on a **7-9** hold 2. Spend hold **1** for **1** to use the chosen move during this conference.

○ **Diagonalization**: When you disprove a theorem, you may immediately use that as a result to prove a different theory.

○ **Calculus**: When you propose a theorem it is more likely to be concrete, increase its need by **1** to make it Constructive.

○ **Proven 'Almost Everywhere'**: You know how to make your plans more robust. Get **+1** to the CARD modifier of your theorems.

○ **Compactify the Space**: When you choose to enter an enclosed space or become trapped with someone, gain **+1** forward until free.

House of CARDs

Complications Antagonists

Risks Debts

+0

Advancement

☐☐☐ An Analysis move
☐ +1 Sly
☐ +1 Rigorous
☐ +1 Creative
☐ +1 Any Stat (max +2)
☐ Gain a Gifted Student

Experience
→ ○ ○
○ ○ ○

+2   +1

↓

+5   +4   +3

◇ Cold

◇ Hot

◇ Sly

Assign +2, +1, -1.

Flip

Look: Athletic, Casual, Rough, Wacky, or Cool
Vice: Perfectionist, Phobia, Independence, or Silliness

Gain all Flip Core Moves and choose one other move.

Core Flip Moves:

● **Flexibility**: When you change plans suddenly, roll **+Hot**. On a hit, your new approach works as a result. On a **7-9** or a miss, your abandoned plan still limits your options, as a CARD.

● **Careful Plans**: When you carefully plan, roll **+Cold**. On a **10+** hold 4, on a **7-9** hold 2, spend hold to give anyone **+1** if following the plan.

● **Evasion**: When your theorem or take a CARD, deftly evade to roll **+Sly**. On a hit, draw out the CARD into a result. On a **10**, evade the CARD. On a miss, you and the theorem take it.

☐☐☐ A Flip move
☐ +1 Hot
☐ +1 Cold
☐ +1 Rigorous
☐☐ Another thief's core move
☐☐ Move from another playbook

○ ○ ○
○ ○ ↓

Advance

Flip Moves:

○ **Dramatic Flair**: When you engage or speak to someone with exaggerated flair, roll **+Elegance**. On a hit they respond as you desire, as a result. On a **7-9** or miss, you need to keep up the persona and overacting, as a CARD.

○ **Plan B**: when you hit on Flexibility, you may Spend **1** hold from Careful Plans to use the rest on the new plan.

○ **Team Player**: If another thief applies a result to a theorem from your plans, you can have them mark **1** XP.

○ **Infiltrator**: Spend a Careful Plan hold **1** for **1** to reduce the need for a theorem giving you access to a location.

If you have 5 or more trophies, get this move:

◐ **Grandmaster Thief**: If the open problem you select involves a daring theft and you solve it, *transcend,* becoming the legendary thief mentor.

Colleagues

Trophies

Thief

Mathematician

Logician

Danish, Midwesterner, Zimbabwean, or Chilean

Name:

| -1 | -2 |

House of

Complications
Antagonists

CARDs

Risks
Debts

| +0 |

| +2 | +1 |

| +5 | +4 | +3 |

Stats

Assign **+2**, **+1**, **-1**.

◇ Creative

◇ Elegant

◇ Rigorous

Logic Moves:

○ **Consistent or Complete**: When you state a theorem, use a *consistent* or a *complete* logic. If *complete*, reduce its need by **1** and it gains a CARD risking inconsistency. If *consistent*, its need increases by **1**, and it gains a **+1** on CARD rolls.

○ **Foundational Approach**: When you prove a theorem, you may immediately conjecture a follow-on course of action.

○ **Unprovable**: As a conference move describe how one open problem cannot be to solved (fake item, a trap, etc.). Proving the impossibility is an open problem.

○ **Inflict Intuitionistic Logic**: You can insist proofs be Intuitionistic, because what isn't true, need not be false. When you successfully use a result to give a theorem a CARD, you may instead remove proof by contradiction or remove all bonuses from proof by induction.

Advancement

- ☐☐☐ A Logic move
- ☐ **+1** Cold
- ☐ **+1** Rigorous
- ☐ **+1** Elegant
- ☐ **+1** Any Stat (max **+2**)
- ☐ Gain a Gifted Student

Experience
→ ○ ○
○ ○ ○

◇ Cold

◇ Hot

◇ Sly

Assign **+2**, **+1**, **-1**.

Fix

Look: Pristine, Ordinary, Gussied Up, or Accountant
Vice: Power, Status, Plots within Plots, or Wealth

Gain all Fix Core Moves and choose one other move.

Core Fix Moves:

● **Throw Money At It**: When you spend loads of cash, roll **+Cold**. On a **10+** get up to **2** results, on a **7-9** get **1** result. On a miss, you can't use this move for the rest of this conference.

● **Get Involved**: When care enough to do a job yourself, roll **+Hot**. On a hit, you get a result. On a **7-9** or a miss, you are in too deep, as a CARD.
If you have 5+ trophies, get this move:

◗ **Go Legit**: If the open problem you select involves acquiring sizable funds or a company, *transcend,* becoming a legitimate business person.

- ☐☐ A Fix move
- ☐ **+1** Cold   ☐ Starting
- ☐ **+1** Sly   ☐☐ Agents
- ☐ **+1** Creative
- ☐☐ Another thief's core move
- ☐☐ Move from another playbook

○ ○ ○
○ ○ ↓
Advance

● **Recruitment**: When you recruit agents to solve your theorems for you, roll **+Sly**. On a **10+** you recruit **2**, on a **7-9**, recruit **1**. Name them and pick a thief type. On a miss, a prospective gets in the way, as a CARD. When you direct agents to perform a task with their thief type, roll **+Agents** involved (max **3**), a hit gives a result, a **7-9** or miss, loses an agent.

Agents

Fix Moves:

○ **Wealthy**: Get **+1** to Throw Money At It.

○ **Sacrifice Play**: Lose an agent 1-for-1 to reduce or increase a theorem's need.

○ **The Boss**: Choose c*ruel* or *loyal* when you take this. If cruel, mark **1** XP each time you lose an agent. If loyal, you may take a CARD to avoid losing an agent.

Colleagues

Trophies

Thief

Theorem

○ Proven   ○ Disproved

○ Lemma - Hold [ ]

Proof

Need [ ]

Results Applied

	-1	-2

House of   +0   CARDs

Complications   Risks

Antagonists   Debts

	+2	+1

+5	+4	+3

Theorem

○ Proven   ○ Disproved

○ Lemma - Hold [ ]

Proof

Need [ ]

Results Applied

	-1	-2

House of   +0   CARDs

Complications   Risks

Antagonists   Debts

	+2	+1

+5	+4	+3

Theorem and CARD Moves

When you **state a theorem**, roll **+Elegant**. On a **10+** your theorem needs **3** results and choose two options from the first list, on a **7-9** your theorem needs **5** results and choose one option from each list.:

- Trivial - this proof requires **1** fewer result.
- Proof by Construction - when proved this theorem has created something concrete, get **3** hold, when you use what this theorem has created, spend **1** hold to get **+1** forward.
- Proof by Induction - when you have a result that sets up ground work for this theorem you can use it as a base case, instead of proving this theorem. Each base case adds **+1** forward to proving this theorem.
- Proof by Contradiction - when you prove this theorem, describe how it turns a problem into an advantage, then converts one of your CARDs into a result.

On a miss, your theorem needs **8** results, choose two options below:

- Proof by Exhaustion - your theorem needs **+4** results.
- Describe how this theorem puts you at risk - take that risk as a CARD (Complication, Antagonist, Risk, or Debt).
- Describe someone who is actively trying to block your theorem - the theorem takes that person's enmity as a CARD.
- Describe someone you are relying upon to prove your theorem - the theorem takes that debt as a CARD.
- Describe an unpredictable event your theorem depends on or is threatened by - the theorem takes that risk as a CARD.

When you **achieve a result which could prove a theorem**, roll **+Rigorous**. On a **10+**, reduce the theorem's need by two. On a **7-9**, reduce the theorem's need by one, or reduce its need by two and describe a risk or complication your result could cause and add it to the theorem as a CARD. On a miss, describe how your result makes the theorem less likely after all, and add this reason to the theorem as a CARD.

When you **achieve a result which could disprove a theorem**, roll **+Rigorous**. On a **10+**, apply this result to the theorem as a CARD. On a **7-9**, either shake-up this theorem or the result is double edged and both you and the theorem take it as a CARD. On a miss, your attempted disproof only strengthens the theorem, reducing its need by one (to a minimum of one).

When you **state a conjecture**, briefly sketch your speculation or plan, then roll **+Creative**. On a hit, whenever another mathematician states or proves a theorem which fulfills this conjecture, they mark one experience. On a **10+**, those mathematicians gain **+1** forward on those rolls. On a miss, describe a complication with your idea, any theorem which fulfills your conjecture takes that complication as a CARD.

When you **apply a proven theorem to prove another theorem**, describe how the proved theorem helps support the unproven one, then roll **+Creative**. On a hit, treat the proven theorem as a result and attempt to prove the unproven theorem. On a **10+**, the proven theorem is a Lemma and gains **2** hold. This hold may be spent by a mathematician to use this theorem as a result, by describing how it supports an unproven theorem. On a **7-9** this theorem generates the result as a Corollary, but may still be used again using this move. On a miss this theorem is exhausted and this move cannot be used on it again.

When you or your theorem **gains a CARD** or is **shaken-up**, roll **+CARD** [which will always be **+6** minus the number of CARDs in your House, including the one just gained]. On a **10+**, all is clear, for now. On a **7-9**, choose one of your CARDs to rear its head. On a miss, the House of Cards falls down and all of the CARDs come due at once. If the House belonged to a theorem it has proven false. If it belongs to you then you have landed in serious trouble, lose all your CARDs and state a theorem to get you out of it, until you prove such a theorem you cannot prove on any other theorem.

Alternatively if your House would fall, you may **double down**. If you do, your House doesn't fall, but if your House falls again this conference, you suffer a permanent consequence, at least removing you from the conference, perhaps including imprisonment, or even death. This consequence can only be overcome by solving an appropriate open problem.

Conferences

At the **beginning of a conference,** one of the mathematicians will be the guest of honor, either chosen by the guest of honor at the previous conference or randomly. This mathematician describes the setting of the conference, briefly mentioning its location (usually a city), and some things of interest in or near the conference. Then each mathematician writes down one open problem, a difficult situation or prize that will require an especially complex theorem to solve. The mathematicians place all of these in a pile. Then the guest of honor directs each other mathematician to select one open problem from someone else. These will be the open problems of the conference. The goal of the conference will be for the mathematicians to prove theorems solving one or more of these open problems. Theorems of this sort work a little differently:

- When stating a theorem that solves an open problem, add **5** to its need.
- When you apply a result to prove a theorem solving an open problem, on a hit, if this result was a proven theorem, reduce the need by an additional **1**.
- When you successfully prove a theorem solving an open problem, all other stated theorems solving that problem are proven false. This does not prohibit stating a new theorem to solve the same problem.

A conference is made up of a series of sessions.

During **each session each mathematician takes a turn,** and then chooses which of the mathematicians who haven't taken a turn yet this session does so next. The last mathematician in a session chooses the first for the following session. In the very first session of the conference, the guest of honor takes the first turn.

The **duration of the conference** is determined by the conference clock, which starts at **0**, and counts up to twice the number of attending mathematicians. During a conference there are a handful of conference moves (see below). The first time in a session that a conference move is used, the conference clock increases by **1**. The clock also increases by **1** each time a theorem solving an open problem is successfully proven. When the clock equals or exceeds twice the number of attending mathematicians, the conference will end at the end of the current session.

During your turn:

- You describe what your character is doing.
- Always refer to other mathematicians by the character's name.
- Solve the open problems.
- Build your House of CARDs.
- To use a move, describe how you are doing what the move requires.
- You may initiate two moves during your turn. After the second move, your turn ends, and you choose whose turn it is next. This doesn't count moves that follow-up your initial move, like using results to prove theorems or handling the consequences to Houses of CARDs.

At the **end of a conference,** you mark one experience for each CARD in your House. If your House is currently fallen, then you are assumed to weasel your way out of your trouble before the next conference. If you solved an open problem during the conference describe a trophy commemorating your achievement.

Conference Moves:

When you use a conference move as the guest of honor, you get an additional **+1** to your roll.

When **you present your work** *at a conference,* roll +Elegant. On a hit, you sneak something into your presentation about one of the stated theorems, gain **+1** forward to using results or theorems to prove or disprove that theorem. On a **10+** you may add one benefit to the theorem (except Trivial). On a **6-,** you are instead distracted by the research you are presenting, take a CARD describing this fixation.

When you **take part in informal discussions** *at a conference,* roll +Creative. On a hit, you relax and get some perspective on things, remove any one CARD from your House. On a **10+** you also get **+1** forward. On a **6-,** you are distracted by someone's idea or problem, take a CARD describing this preoccupation.

When you **badmouth a colleague** *at a conference,* roll +Cold. On a **10+,** give them a CARD describing how attendees at the conference have taken a dislike to your colleague. On a **7-9,** give them the CARD, but you attract some ire from the attendees too, your House is shaken-up. On a miss, your gossiping backfires, take a CARD representing the distrust you've earned.

When you **network among attendees** *at a conference,* roll +Hot. On a **10+,** get 3 hold, on a **7-9,** get **1** hold. Spend hold, one for one, to gain **+1** forward when an attendee knowingly or unknowingly helps you during a move. This hold lasts for the rest of the conference. On a miss, you make an enemy instead of friends and contacts, take this enemy as a CARD.