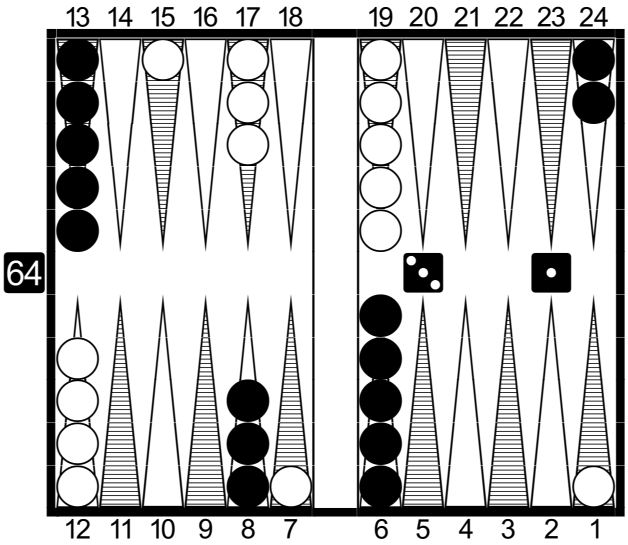
SOLUTIONS – PROBLEM OF THE WEEK #3

Problem E



○ is Opponent

score: 0
pip: 158

Unlimited Game
Jacoby Beaver

pip: 167
score: 0

● is Player

XGID=-a----EaC---dE-a-c-e----B-:0:0:1:31:0:0:3:0:10

● to play 31

1.	Rollout[1]	8/5 6/5	eq: -0.067
	Player:	48.08% (G:12.68% B:0.51%)	Conf.: ± 0.010 (-0.076...-0.057) - [100.0%]
	Opponent:	51.92% (G:12.62% B:0.58%)	Duration: 21 minutes 55 seconds
2.	Rollout[1]	24/21 8/7*	eq: -0.109 (-0.043)
	Player:	47.25% (G:12.83% B:0.60%)	Conf.: ± 0.012 (-0.121...-0.098) - [0.0%]
	Opponent:	52.75% (G:14.51% B:0.70%)	Duration: 27 minutes 06 seconds
3.	Rollout[2]	13/10 8/7*	eq: -0.124 (-0.057)
	Player:	47.38% (G:13.13% B:0.62%)	Conf.: ± 0.016 (-0.140...-0.108) - [0.0%]
	Opponent:	52.62% (G:16.05% B:0.98%)	Duration: 12 minutes 37 seconds

[1] 2592 Games rolled with Variance Reduction.
Moves: 3-ply, cube decisions: XG Roller

[2] 1296 Games rolled with Variance Reduction.
Moves: 3-ply, cube decisions: XG Roller

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In general, after your opponent splits to your bar-point, you will hit that blot if you roll an ace or a 6. In this position, however, you have another strong alternative – you can make your 5-point, the most important point on the board.

So, how do we reconcile the choice between these two plays which both achieve an important objective? Unfortunately, there doesn't seem to be any particularly strong guiding principle here.[1] You can only rely on the results of a rollout from the World's strongest bot, Extreme Gammon. Its conclusion is that the best play in this case is to make the 5-point.

[1] In a future Problem of the Week, we will cover Paul Magriel's famous safe-versus-bold criteria, which provides guidance as to whether a safe play or a bold play is called for in a particular position (see Magriel, Paul, ***Backgammon***, X-22 Publishing, 1976, Chapter 16, pp. 210-221). These criteria, though over 40 years old, have withstood the test of time. Unfortunately, however, their application does not resolve the issue presented by this particular problem.

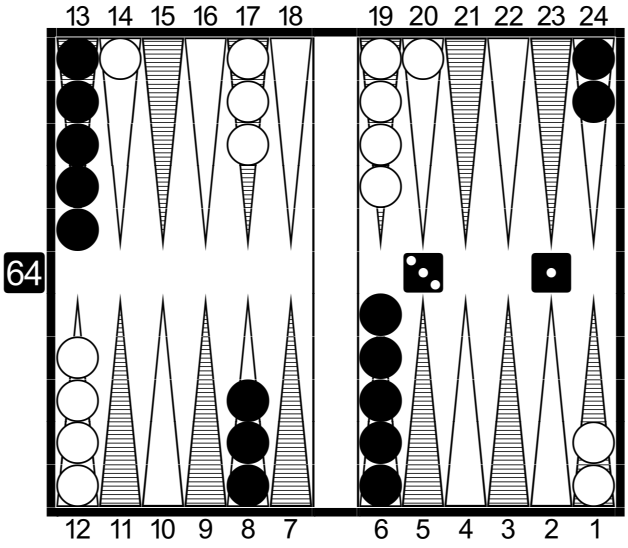
Since this play comes up quite frequently, it is worthwhile to just remember that the correct play is to make the 5-point in this situation.

Related Plays

- After White plays an opening 62, 24/18 13/11, it is also correct to make the 5-point with a 31 roll.
- After White plays an opening 64, 24/18 13/9, it is actually best to hit the blot on the bar-point with a 31 roll, by playing 24/21 8/7*, although it is **very** close. The reason for this is the strength of the builder that White has added on his 9-point. Because of it, if Black simply makes the 5-point, almost all of White's follow-up rolls will either make the defensive bar-point or a key point in his inner board (only a roll of 32 fails to do so). The difference between the two plays is so small, though, that it is probably worthwhile to just follow the rule that you forgo the hit and make the 5-point whenever you roll a 31 in response to those opening rolls where your opponent splits one of his rear checkers to your bar-point.
- If Black were to roll 42 in the above position, the correct play would be to hit the blot on the bar-point with 13/7*.[2]
- If Black were to roll 65 in the above position, the best play would not be to run, 24/13. Instead, Black should take advantage of a better opportunity – he should hit twice with 13/7* 6/1*.

[2] For many years, the choice between hitting on the bar-point and making the 4-point was considered to be a toss-up in this situation. However, once again Extreme Gammon rollout results have resolved this choice-of-play question with the conclusion that it is slightly better to hit on the bar-point. See, *e.g.*, Robertie, Bill, ***How to Play the Opening in Backgammon***, The Gammon Press, 2019, p. 33.

Problem F



○ is Opponent

score: 0
pip: 164

Unlimited Game
Jacoby Beaver

pip: 167
score: 0

● is Player

XGID=-b----E-C---dEa--c-da---B-:0:0:1:31:0:0:3:0:10

● to play 31

1.	Rollout[1]	24/20*	eq: +0.100
	Player:	51.77% (G:16.18% B:1.13%)	Conf.: ± 0.019 (+0.080...+0.119) - [100.0%]
	Opponent:	48.23% (G:12.59% B:0.60%)	Duration: 16 minutes 05 seconds
2.	Rollout[1]	8/5 6/5	eq: -0.011 (-0.111)
	Player:	49.67% (G:15.08% B:0.83%)	Conf.: ± 0.017 (-0.028...+0.005) - [0.0%]
	Opponent:	50.33% (G:15.42% B:0.80%)	Duration: 10 minutes 00 second

[1] 1296 Games rolled with Variance Reduction.
Moves: 3-ply, cube decisions: XG Roller

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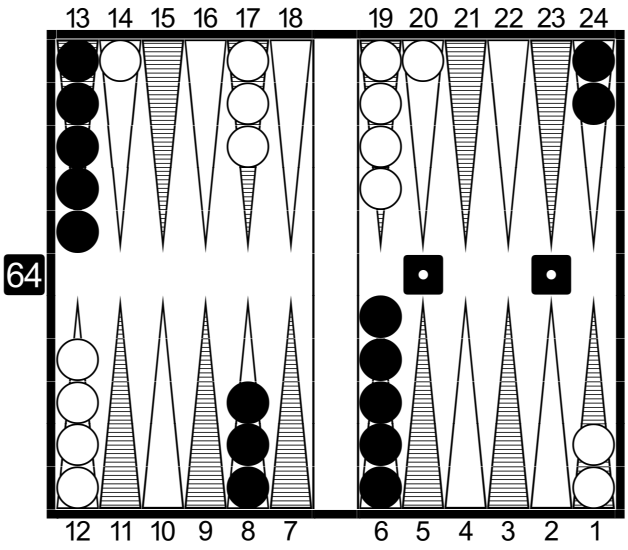
Now it is mandatory for Black to hit White's slotted checker on the 20-point. As compared to the previous problem, if Black hits in this situation, he gains 20 pips in the race, sends a third White checker back, starts the defensive anchor on the golden point and (by extension) prevents White from covering and making his own 5-point. While none of these benefits alone overrides the inherent strength of having the 5-point, collectively, they make for tangible gains that make Black the overall favorite in the game.

While the alternative play of making the 5-point is a constructive one, in this case it is likely that White will follow suit and make his own 5-point in response (he covers with 1's, 3's and 6's, as well as indirect 8's – only 55 and 52 fail to cover). Since Black doesn't figure to end up with an advantage by making his own 5-point, hitting is the best play in this position.

The correct play in Problem F is 24/20*.

Problem G



○ is Opponent

score: 0
pip: 164

Unlimited Game
Jacoby Beaver

pip: 167
score: 0

● is Player

XGID=-b----E-C---dEa--c-da---B-:0:0:1:11:0:0:3:0:10

● to play 11

1.	Rollout[1]	8/7(2) 6/5(2)	eq: +0.135
	Player:	53.29% (G:16.05% B:0.91%)	Conf.: ± 0.008 (+0.127...+0.143) - [100.0%]
	Opponent:	46.71% (G:14.11% B:0.78%)	Duration: 38 minutes 57 seconds
2.	Rollout[1]	24/20*	eq: +0.102 (-0.033)
	Player:	51.79% (G:16.22% B:1.08%)	Conf.: ± 0.009 (+0.093...+0.111) - [0.0%]
	Opponent:	48.21% (G:12.61% B:0.53%)	Duration: 1 hour 03 minutes
3.	Rollout[2]	24/22 6/5(2)	eq: +0.090 (-0.045)
	Player:	52.45% (G:14.51% B:0.75%)	Conf.: ± 0.012 (+0.078...+0.102) - [0.0%]
	Opponent:	47.55% (G:13.80% B:0.54%)	Duration: 20 minutes 45 seconds

[1] 5184 Games rolled with Variance Reduction.
Moves: 3-ply, cube decisions: XG Roller

[2] 2592 Games rolled with Variance Reduction.
Moves: 3-ply, cube decisions: XG Roller

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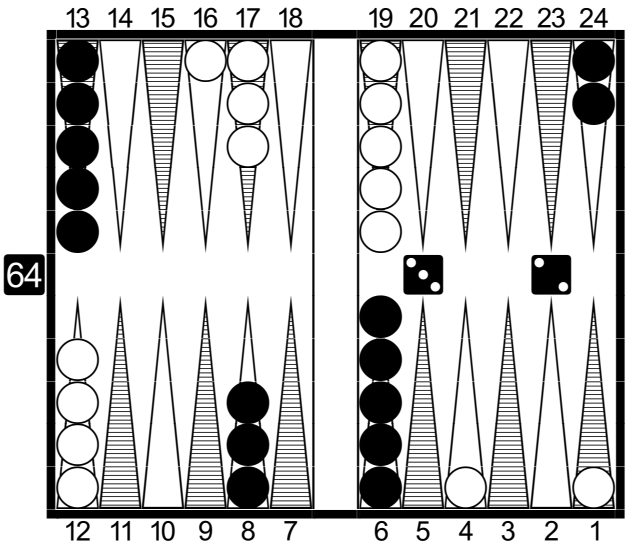
As compared to the previous problem, in this position it is once again correct to refrain from hitting a checker in favor of an offensive play. In this case, the regular play of the double-ace roll, 8/7(2) 6/5(2) allows Black to make **both** his bar-point and his 5-point, as opposed to just his 5-point (as was the case in the previous problem). The ability to make two key points rather than just one tips the scales against hitting on the 20-point and back in favor of making the routine play with double-aces. Even if White makes his 5-point on his next turn (as is likely), Black will remain with an edge in the ensuing priming battle, with better timing and 3-1/2 points of a prime.

8/7(2) 6/5(2) is best in Problem G.

Problem H



○ is Opponent

score: 0
pip: 160

Unlimited Game
Jacoby Beaver

pip: 167
score: 0

● is Player

XGID=-a--a-E-C---dE--ac-e----B-:0:0:1:32:0:0:3:0:10

● to play 32

1.	Rollout[1]	13/10 6/4*	eq: -0.098
	Player:	48.26% (G:13.67% B:0.67%)	Conf.: ± 0.005 (-0.103...-0.094) - [94.0%]
	Opponent:	51.74% (G:16.69% B:1.16%)	Duration: 3 hours 16 minutes
2.	Rollout[1]	24/21 6/4*	eq: -0.103 (-0.005)
	Player:	48.19% (G:12.70% B:0.61%)	Conf.: ± 0.004 (-0.108...-0.099) - [6.0%]
	Opponent:	51.81% (G:16.16% B:0.87%)	Duration: 3 hours 27 minutes
3.	Rollout[2]	6/4* 4/1*	eq: -0.143 (-0.044)
	Player:	46.72% (G:13.12% B:0.46%)	Conf.: ± 0.008 (-0.150...-0.135) - [0.0%]
	Opponent:	53.28% (G:15.77% B:0.82%)	Duration: 47 minutes 59 seconds

[1] 20736 Games rolled with Variance Reduction.
Moves: 3-ply, cube decisions: XG Roller

[2] 5184 Games rolled with Variance Reduction.
Moves: 3-ply, cube decisions: XG Roller

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I have included this position as a contrasting position to Problem B and Problem D from last week.[3] Again, White's play on his opening roll (splitting-and-building) has made it difficult for Black to either split his back checkers or to bring down builders from the midpoint. As such, Black must hit White's checker on his 4-point. In addition, as I noted in the solution discussion to last week's Problem A, it is thematic in the opening stages of a backgammon game to hit enemy blots that are placed on your 5-point or 4-point in order to prevent your opponent from establishing an advanced defensive anchor. For these reasons, playing 6/4* with the two is clear.

The question that remains is what should be done with the other half of your roll that remains to be played (the 3). One possibility is to hit a second checker by continuing with 4/1*, putting a second White checker

[3] To recap, Problem B involved a reply of 54 to an opening roll of 64, which was played by making the major split (24/18 13/9) – there, the correct response was to hit loose on the ace-point and split the back checkers (24/20 6/1*). Problem D involved a reply of 41 to an opening roll of 41, which was played by splitting the back checkers (24/23 13/9) – there, the correct response was the double-hit inside your home board (6/2* 2/1*).

on the bar. As was noted in the solution discussion to last week's Problem D, hitting two checkers is often a strong play; in fact, hitting two was the clearly correct play in Problem D.

However, leaving a blot on your ace-point early in the game is usually more of a liability than an asset. At the start of a game, you don't usually want to make the ace-point – although it adds a new inner board point, which can be an asset and is useful if you are pursuing a blitzing game plan, it also puts two checkers out of play for the remainder of the game.

I can already hear the cries of foul from the fans in the background: "But wait. You just told us in Problem B and Problem D that the correct response involved hitting and leaving a blot on the ace-point on the very second roll of the game! What are you now babbling on about? We can hit two checkers here – let's do it!"

The short answer is that those Problems were "special."

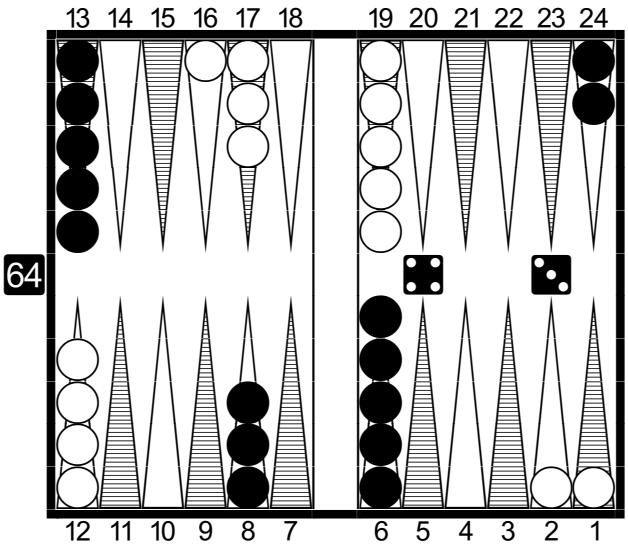
- In Problem B, hitting with 6/1* was played as a distraction play to prevent your opponent from having a free hand to make the defensive bar-point or a new inner-board point (and almost all of his rolls will do precisely that). In addition, White's opening roll play in that position ("splitting-and-building") made the loose hit on the ace-point the best play of a bad lot of choices.
- In Problem D, the loose hit on the ace-point was part of a double-hit play with an otherwise poor roll. Also, note that the 2-point is a deep inner-board point; as such, it is not a high-priority point to be made, especially in the early going of a backgammon game. Once Black hits on that point, following through by also hitting on the ace-point makes for a useful play of the other half of the roll (the 1).

In this Problem, though, by playing 6/4*, Black puts a White checker on the bar, while **simultaneously** slotting his 4-point. Unlike the deuce-point and the ace-point, the 4-point is a key point that Black very much wants to make. If Black can make his 4-point, he will have made a large improvement in the strength of his position, whereas by making the deuce-point or the ace-point, he won't achieve a comparable gain.

So, Black should reject the play of 4/1* with the three on this roll, and leave his checker slotted on his 4-point. Instead, he has two productive alternatives for the play of the other half of his roll (now that he has taken away half of White's next roll by putting a checker on the bar). Best is 13/10, which brings down a builder in direct range of a point that he would much like to make – his slotted 4-point. If White is unable to hit Black's blot, Black will be able to cover it with almost all of his rolls (only 55 and 53 fail to cover the 4-point blot after Black plays 13/10 6/4*). A close alternative for the play of the three is 24/21, splitting the back checkers, and putting some pressure on the builder that White has placed on his 9-point. Take full credit if you went with this play – the important thing to realize in evaluating this problem position was to recognize that (a) you **need** to hit White's blot on your 4-point, and (b) you should **only** hit that one blot, and not continue on to hit loose on the ace-point.

If you were able to recognize both of those things and go with 13/10 6/4*, give yourself a pat on the back.

Problem I



○ is Opponent

score: 0
pip: 162

Unlimited Game
Jacoby Beaver

pip: 167
score: 0

● is Player

XGID=-aa---E-C---dE--ac-e----B-:0:0:1:43:0:0:3:0:10

● to play 43

1.	Rollout[1]	24/21 6/2*	eq: -0.130
	Player:	47.18% (G:12.46% B:0.51%)	Conf.: ± 0.011 (-0.142...-0.119) - [100.0%]
	Opponent:	52.82% (G:15.62% B:0.80%)	Duration: 26 minutes 24 seconds
2.	Rollout[1]	24/21 13/9	eq: -0.158 (-0.028)
	Player:	46.44% (G:12.53% B:0.59%)	Conf.: ± 0.011 (-0.170...-0.147) - [0.0%]
	Opponent:	53.56% (G:16.50% B:0.82%)	Duration: 22 minutes 11 seconds
3.	Rollout[2]	24/20 13/10	eq: -0.176 (-0.046)
	Player:	46.25% (G:11.99% B:0.59%)	Conf.: ± 0.016 (-0.192...-0.160) - [0.0%]
	Opponent:	53.75% (G:16.27% B:0.79%)	Duration: 11 minutes 12 seconds
4.	Rollout[2]	13/10 13/9	eq: -0.177 (-0.047)
	Player:	45.83% (G:13.32% B:0.61%)	Conf.: ± 0.018 (-0.195...-0.159) - [0.0%]
	Opponent:	54.17% (G:16.56% B:1.12%)	Duration: 11 minutes 13 seconds
5.	Rollout[2]	24/21 24/20	eq: -0.194 (-0.064)
	Player:	45.84% (G:11.45% B:0.51%)	Conf.: ± 0.013 (-0.207...-0.181) - [0.0%]
	Opponent:	54.16% (G:16.82% B:0.65%)	Duration: 10 minutes 30 seconds

[1] 2592 Games rolled with Variance Reduction.
Moves: 3-ply, cube decisions: XG Roller

[2] 1296 Games rolled with Variance Reduction.
Moves: 3-ply, cube decisions: XG Roller

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When you roll a 43 on the opening roll, there are three choices that are all about even. You can bring down two builders from your midpoint with 13/10 13/9. Alternatively, you can make a splitting play with either 24/21 13/9 or 24/20 13/10. As these plays are all about equal in merit, how does White's actual opening play in this position affect the relative advantages and disadvantages of those three choices?

The answer is that by splitting his back checkers, White has made it less desirable for Black to bring down checkers from the midpoint, since they will be subject to additional indirect shots from White's two rear checkers that now sit on different points. Similarly, White's builder on his 9-point also makes it less desirable for Black to advance one of his rear checkers to the 21-point or the 20-point with his 43 roll,

since White has additional rolls that allow him to attack and/or point on any Black checker that is advanced in White's inner board.

So, what is Black to do?

It turns out that the odd-looking play, 24/21 6/2*, is the best choice! While hitting deep in your inner board is a play that should generally be avoided in the opening,[4] the play rises to the top of the list here, mainly because the usual alternatives have all become poorer plays due to the tactical nuances of the position that have resulted due to the particular opening play that White has made. The loose hit on the deuce-point essentially serves as a "tempo" play which helps to protect the checker that is placed on the 21-point.[5] As an added advantage, White now has some poor rolls from the bar (in particular, his non-hitting 6's don't play well from the bar, and 66 is a dancing roll that prevents White from making any play whatsoever – the "Boxcar Bonus," as Marty Storer likes to call it).

Related Plays

- After an opening 21 by White, played by splitting his back checkers (24/23 13/11), the correct play with a 43 reply roll is again, 24/21 6/2*, for all the reasons described above.
- After an opening 51 by White, played by splitting his back checkers (24/23 13/8), the correct play with a 43 reply roll is to again avoid bringing builders into Black's outfield, but in this case it's best to advance both rear checkers, with 24/21 24/20 (the so-called "Middle-Eastern" split). There is less of a need to hit White's blot on the 2-point in this case, because White's added builder on the 8-point is not as threatening to the rear checkers that move up in White's inner board (unlike the situation Black faces after the 21 and 41 splits, where White adds an active builder on a new point in his outfield). Without strong pressure from White on Black's rear checkers, there isn't a need for Black to execute a "tempo" play, as he does with 6/2* in the case of the problem position.

This was a very tough, counter-intuitive problem.

Kudos to those that were able to find the best play!

[4] As opposed to hitting loose on the 5-point or the 4-point, which are generally standard and thematic plays in the early game. See the solution discussion to Problem H above for further discussion on the benefits of making loose hits on key points in the early stages of a backgammon game.

[5] In common backgammon parlance, a "tempo" play is basically a play which involves hitting a checker with the specific tactical objective of depriving your opponent of an opportunity to make full use of his next roll. By hitting, your opponent must use half of his next roll to enter from the bar. Tempo plays are commonly used to minimize a strong threat from your opponent; typical examples are situations where your opponent has many builders in place which he can use to strengthen his position and/or situations where you have a loose blot which you want to help "protect" from an attack by your opponent. By making a loose hit as a tempo play, you are essentially distracting your opponent from some of his more primary objectives – for example, since he has to use half of his roll to enter from the bar, he won't be able to (a) make a new point that will extend his prime or strengthen his inner board or (b) point on your exposed blot (unless he is lucky enough to roll doubles). You are essentially hoping that by distracting/delaying your opponent's progress, something good might happen for you in the meantime that will improve your winning chances (*e.g.*, you might be able to escape a back checker or establish an advanced anchor).

Further Study and References

Here are three good sources covering the topic covered by this week's (and last week's) Problem of the Week. The first two are books that you could obtain from Carol Joy Cole's Backgammon Boutique; the third is available online at no cost.

Robertie, Bill, ***How to Play the Opening in Backgammon / Part 1 – A New Way of Thinking***, The Gammon Press, 2019.

> This is Bill Robertie's latest work, and is the first of what is promised to be a three-part series covering opening play in the modern era. Chapters 1 and 2 are devoted specifically to the play of the opening roll and the correct second roll responses to each of the standard opening plays. It is a comprehensive overview, providing explanations as to the rationale for the correct plays and, on occasion, a stroll down memory lane with a discussion of backgammon history and its role in the evolution of modern opening theory. Chapters 3 through 5 cover situations where you have a choice of strong options where one of the choices is to make the 5-point, 20-point or 4-point, respectively.

Kageyama, Michihito, and Herrera, Roland, ***Opening Concepts***, CreateSpace Independent Publishing Platform, 2017.

> This book, written by one of Backgammon's Giants, provides a pretty good overview of the ideas that govern proper play of early game positions in backgammon. His focus is on a set of proverbs (hence the book's title, "Opening Concepts") that he outlines which provide guidance on the overall objectives of opening play (*e.g.*, fight for a good point, break the mountain, attacking with 8 checkers is weak and attacking with 10 checkers is strong). These proverbs are intended to help players determine the best move in positions that they may face – many example positions are included with explanations to reinforce the ideas that are presented in the book.

Bagai, Jeremy, ***Bagai's Replies: Mastering the Second Roll***, The Fortuitous Press.

> **http://www.fortuitouspress.com/replies#Rules**
>
> In this article/paper, Jeremy Bagai presents a methodology for determining the proper replies for all of Backgammon's most common opening plays. He employs a heuristic approach, having developed a set of rules that are designed to ensure that you won't make a mistake in excess of 0.01 in equity. The rules have been designed to cover 630 second-roll scenarios: the application of his rules identify the correct play in 568 cases, a play within 0.01 of the correct play in 36 cases, and a play that is an error in excess of 0.01 in 26 cases. If you apply his rules, and learn the correct play in the 26 cases where the rules don't quite "work" (Bagai calls these situations "exceptions"), you will almost always play the correct move (about 95% of the time), and only occasionally make a play that is very slightly incorrect (within 0.01 in equity of the perfect play).