## $6 \times 6$-Board

## Renju Problems - 3



Black to play and win

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6\times6-Board Renju Problems - 3
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Tokai Renju Association in Japan First Printing, February 2013
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## Terms and Notation

4-move : to make a Four.
3-move : to make a Three.
4-3 : Four-Three, a fork consisting of one Four and one Three.
3-3 : double-Three, a fork consisting of two Threes. Forbidden for Black.
4-4 : double-Four, a fork consisting of two Fours. Forbidden for Black.
Overline : an unbroken row consisting of six or more stones of the same color. Forbidden for Black, but one of winning patterns for White.

Threat : Three, Four, Mise-move, or Fukumi-move.
Mise-move : a move which threatens to make 4-3.
Fukumi-move : a move which threatens to play VCF.
VCF : Victory by Continuous Fours.
VCT : Victory by Continuous Threats.
double-Mise-move : a move which threatens to make two kinds of 4-3.
Nori-move : a move which may be able to block opponent's VCF, VCT or Threat by making a counter-Threat.
(A;B;C;••) : Continuous Fours. Defense moves are omitted.
$\langle\mathbf{A} \rightarrow \mathbf{B}>$ : Attacker plays $A$ first and $B$ next, wherever his opponent defends against $A$. $A$ is a Threat except Four, and $B$ is a final winning pattern such as 4-3. The form of B may be 'C or D', '(C;D;•. )' or the combination. For example, "Black wins by $<3 \rightarrow A$ or $(B ; C)>$ ".

A/B : A instead of B. For example, "C/3 is met by White d". It means that "C instead of 3 results in failure by White strong defense $d$ ".

## 6×6-Board Renju Problems - 3

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The Web site of Tokai Renju Association has some pages on Renju problems, where one can enjoy solving them interactively. One of those pages is on $6 \times 6$-board Renju problems[2].

This booklet is a translation of a half of [4] in References. All problems in this booklet and [4] are found in the Web site.

## 1 On 6×6-Board Renju Problems

$15 \times 15$-boards are used in Renju games. The boards are also used in Renju problems, of course. $6 \times 6$-board Renju problems use $6 \times 6$-board as the name shows. They are considered as intelligent games or intelligent puzzles based on the Renju rule.

The rule of $6 \times 6$-board Renju problems is weakened by removing some of real game elements. For example, the condition on numbers of Black and White stones are not required. It is possible that no defensive stones are on a board. It is impossible that a Black stone is at a center of the board ( $6 \times 6$-board has not a center).

Since non-meaningless Renju problems require at least 6 in length and in width, $6 \times 6$-boards are minimum. Although the board is very small, many good offensive and defensive tactics found in normal Renju games can be also found in $6 \times 6$-board problems. We can say that those problems are suitable for learning and enjoying such tactics in the condensed form. Furthermore, by using small boards we get such merit as good training for complete looking-ahead or calculation about all variations. Those problems, however, occasionally require a little different sense from that of normal Renju, so it is also a good idea that one enjoys them comfortably as intelligent puzzles of a joyful field in the large world of Renju.

The rule of Renju problems says the defenders must select his moves so that the sequence becomes longer. It is also true on $6 \times 6$-board problems. But the case of trapping Black into forbidden moves is treated as exception of the rule in this booklet for simplifying the solution.

The problems shown in the Web page are classified into two parts, VCT problems and VCF problems. VCT problems are classified again into three levels, that is, elementary, middle and advanced levels. The same classification is used in this booklet.

Although the author has paid full attention when making and analysing problems, there may be some problems which have extra or no winning sequences. Moreover, there may be imperfect or unsuitable description. If you find such faults, please inform the author. Thank you in advance.

## 2 Elementary Level VCT Problems


$\left[\operatorname{A01}_{(\mathrm{c} 170)}\right]^{1}$ Black to play and win.
Hint: Play the first move, after having confirmed winning sequence for the strongest defense.

[ $\left.\mathbf{A 0 2}_{(\mathrm{co72})}\right]$ Black to play and win.
Hint: If Black can avoid some traps, he will not have much trouble.

[ $\left.\mathbf{A 0 3}_{(\mathrm{c} 179)}\right]$ Black to play and win.
Hint: There are some candidates for the order of moves. Which one is correct?

[ $\left.\mathbf{A 0 4}_{(\mathrm{c} 106)}\right]$ Black to play and win.
Hint: The first move is very powerful.

[^0]
[A01 Ans] Black wins by $<1 \rightarrow \mathrm{~A}$ or $(\mathrm{B} ; \mathrm{C} ; \mathrm{A} ; \mathrm{D})>$.
The strongest defense against 1 is e.
$\#<f \rightarrow A>$ is a failure, becasue the diagonal line including $f$ and $A$ doesn't make Three. ${ }^{2}$

[A02 Ans] Black wins by $\langle 1 \rightarrow(\mathrm{~A} ; \mathrm{B})>$.
\# double-Mise-move A/1 is met by White c, and next Black 1 followed by $d$ is met by White e followed by $f$. $B / 1$ is met by White $c$ and e/ by $A$-etc ${ }^{3}$.

[A03 Ans] Black wins by $\langle 3 \rightarrow$ A $\rangle$.

- if 2 elsewhere ${ }^{4}$, Black wins by $\langle\mathrm{B} \rightarrow \mathrm{C}\rangle$

$$
(\#\langle\mathrm{C} \rightarrow \mathrm{~B}\rangle \text { is not correct })
$$

\# C/ 1 is met by White 3 , and next 1 by White ( $\mathrm{d} ; \mathrm{A}$ ). Both $B / 3$ and $C / 3$ are met by White 4 -move e.

[A04 Ans] Black wins by $\langle 1 \rightarrow(A ; B)$ or $(A ; B ; C ; D ; E)>$. The strongest defense against 1 is $f$.
\# $\mathrm{B} / 1$ is met by White C .

[^1]
[ $\left.\boldsymbol{A 0 5}_{(\mathrm{c} 246)}\right]$ Black to play and win.
Hint: Can Black win by double-Mise-move? Consider completely until getting real winning 4-3.
[ $\mathbf{A 0 6}_{\text {(co91) }}$ ] Black to play and win.
Hint: Basic tactics is applied. Make sure that it is correct, by considering various defenses.

[ $\left.\mathbf{A 0 7}_{\text {(c171) }}\right]$ Black to play and win.
Hint: Attack so that White cannot realize successful Nori-move.

[ $\mathbf{A 0 8}_{(\mathrm{c} 172)}$ ] Black to play and win.
Hint: Consider the first move which is Mise-move or 4 -move. Although the placement is similar to [A07], the first move is different.

[A05 Ans] Black wins by $<1 \rightarrow \mathrm{~A}$ or B or $(\mathrm{A} ; \mathrm{C} ; \mathrm{D} ; \mathrm{E})>$. The strongest defense against 1 is $f$.
Black wins by $\mathrm{A} / 1$ as well, but it needs one more Black move though the same winning pattern.
\# $D / 1$ is met by White $B$. When White 2 is $f,(A ; C ; D)$ is not correct since spot $B$ is 4-4.

[A06 Ans] Black wins by $<1 \rightarrow(\mathrm{~A}(\mathrm{E}))^{5}$ or $(\mathrm{B} ; \mathrm{C} ; \mathrm{D})$ or ( $\mathrm{A} ; \mathrm{E} ; \mathrm{F} ; \mathrm{B} ; \mathrm{G}$ )>.
The strongest defense against 1 is $h$.
' $B$ followed by 1 '/1 and '( $B ; A$ ) followed by 1 '/1 are also possible, but they need more moves though the same winning pattern.

[A07 Ans] Black wins by $\langle 3 \rightarrow$ A>.

- if 2 elsewhere, Black wins in the same way, or wins by ( $\mathrm{B} ; \mathrm{C}$ )
\# $3 / 1$ is met by White 1 -etc, $A / 1$ by $C$ and $A / 3$ by $C$. ' 2 followed by 1 ' $/ 1$ is met by White $B$ followed by d .

[A08 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}\rangle$.
- same wherever 4 \# 3/1 is met by White 1 and $A / 5$ by b. 4 -move is necessary in this problem.

[^2]
[ $\left.\operatorname{A09}_{(\mathrm{c} 212)}\right]$ Black to play and win.
Hint: Make a half round trip while paying attention to defenses.

[ $\left.\mathbf{A 1 0}_{(\mathrm{c} 120)}\right]$ Black to play and win.
Hint: White might make candidates of 4-move against Black 1, but you need not feel afraid.

[ $\mathbf{A 1 1}_{(\mathrm{c} 110)}$ ] Black to play and win.
Hint: It is one of useful tactics to force defense moves at narrow side.

[ $\left.\operatorname{A12}_{(\mathrm{c} 114)}\right]$ Black to play and win.
Hint: Final VCF sequence is long.

[A09 Ans] Black wins by $\langle 3 \rightarrow(A(; B))>$.

- if 2 elsewhere, Black wins by ( $2 ; \mathrm{C} ; \mathrm{A} ; 3$ ) \# 2/1 is met by White 1 .

[A10 Ans] Black wins by $\langle 3 \rightarrow(A ; B ; C ; D)>$. White 4 -move against 3 is ineffective ${ }^{6}$.
Black can win also by starting from $A$ and so on, but these sequences need more moves though the same winning pattern.
- same wherever 2

[A11 Ans] Black wins by $\langle 3 \rightarrow \mathrm{~A}\rangle$.
- if 2 elsewhere, Black wins at B \# A/ 1 is met by White 1 and $3 / 1$ by 1 -etc.

[A12 Ans] Black wins by $\langle 1 \rightarrow \mathrm{~A}$ or $(\mathrm{A} ; \mathrm{B} ; \mathrm{C} ; \mathrm{D} ; \mathrm{E} ; \mathrm{F} ; \mathrm{G})>$. The strongest defense against 1 is $h$.
\# C/ 1 is met by White $i$, and next 1 and $E$ are met by White 4 -move j and A respectively. $\mathrm{E} / 1$ is met by White $A$, and next $C$ and $D$ are met by White i-etc. $B / 1$ is met by White 1 .

[^3]
[A14(ci04)] Black to play and win.
Hint: Fix the target. The order of moves is important.

[A15(c158)] Black to play and win.
Hint: Black plays good first move, so that the defense move is limited.

[ A16 $_{(\mathrm{c} 156)}$ ] Black to play and win.
Hint: Jump and jump. Which order?

[A13 Ans] Black wins by $\langle 5 \rightarrow$ A $>$.

- if 2 elsewhere, Black wins by $\langle 5 \rightarrow(3 ; \mathrm{A})>$
\# $2 / 1$ is met by White $1, B / 1$ by A-etc and $5 / 3$ by 4 -move 3. ' 4 -move 3 followed by 1 '/1 is met by White 4 followed by c.

[A14 Ans] Black wins by $\langle 3 \rightarrow$ A>.
- if 2 elsewhere, Black wins by ( $\mathrm{D} ; \mathrm{C}$ ) or ( $\mathrm{B} ; 3 ; \mathrm{A} ; \mathrm{C}$ ) $\# 3 / 1$ is met by White $B, A / 1$ by $C$ and $A / 3$ by $C$.

[A15 Ans] Black wins by $\langle 3 \rightarrow \mathrm{~A}$ or B$\rangle$.
Black wins by ' 4 -move A or B followed by 3 '/3 as well, but they need more Black moves though the same winning pattern.
- if 2 elsewhere, Black wins at A, or wins by (C;D;E) or (B;C(;3))
\# C/ 1 is met by White $B$ and $3 / 1$ by $B$-etc. ' $B$ followded by 1 '/1 is met by White E followed by 3.

[A16 Ans] Black wins by $\langle 3 \rightarrow$ A>. White 4-move against 3 is ineffective.
- if 2 elsewhere, Black wins by ( $2 ; B ; C$ )
\# $3 / 1$ is met by White e, $B / 1$ by 1 -etc and $D / 3$ by $f$.

[ $\mathbf{A 1 7}_{\text {(c203) }}$ ] Black to play and win.
Hint: Black's second move is changed depending on White move.

[ A18 $_{(\mathrm{co53})}$ ] Black to play and win.
Hint: Toward the goal by nullifying White Nori-move.

[ $\left.\operatorname{A19}_{(\mathrm{c} 191)}\right]$ Black to play and win.
Hint: After making some Threats, it seems to win and also seems not to win.

[ $\left.\mathbf{A 2 0}_{(\mathrm{c} 207)}\right]$ Black to play and win.
Hint: Devise the order of moves to overcome Norimove.

[A17 Ans] Black wins by $\langle 3 \rightarrow(A ; B)\rangle$.
- if $\mathrm{c} / 2$, Black wins by $\langle\mathrm{B} \rightarrow(\mathrm{A} ; 3)>$
(\# neither 3 nor A after 2 is possible). same if $\mathrm{d} / 2$ (both A and B after 2 are possible) \# Both $\mathrm{A} / 3$ and $\mathrm{B} / 3$ are met by White e.

[A18 Ans] Black wins by $\langle 3 \rightarrow(\mathrm{~A} ; \mathrm{B})>$. White 4-move against 3 is ineffective.
- if 2 elsewhere, Black wins by $\langle A \rightarrow(3(; 2))>$ $\# 3 / 1$ is met by White $c, A / 1$ by 3 and $A / 3$ by $B$.

[ $\mathbf{A 1 9}_{\text {(c191) }}$ Ans] Black wins by $\langle 3 \rightarrow \mathrm{~A}$ or $(\mathrm{B} ; \mathrm{A} ; \mathrm{C})\rangle$.
- same wherever 2

[A20 Ans] Black wins by $\langle 3 \rightarrow(\mathrm{~A} ; \mathrm{B})>$. White 4-move against 3 is ineffective.
- if 2 elsewhere, Black wins by $\langle 3 \rightarrow \mathrm{~A}>$

$$
(<A \rightarrow(3(; 2))>\text { is also possible })
$$

\# $3 / 1$ is met by White $c$ and $A / 3$ by $B$.

[ $\mathbf{A 2 1}_{(\mathrm{c} 148)}$ ] Black to play and win.
Hint: The basic plan is Three followed by 4-3, but ...
[A22(c189)] Black to play and win.
Hint: After playing Three twice, Black wins by 4-3 or VCF.

[A23(c086) ${ }^{\text {] }}$ Black to play and win.
Hint: Although it seems easy, it is necessary to change the winning course depending on White defense.

[A24(c092) ${ }^{\text {] }}$ Black to play and win.
Hint: It seems difficult due to Nori-move, but the possibility of Black 4-move may be helpful. The order of Threes is important.

[A21 Ans] Black wins by $\langle 3 \rightarrow(A ; B(; C))>$. White 4-move against 3 is ineffective.

- if 2 elsewhere, Black wins at B
\# $3 / 1$ is met by White $d$ and $A / 3$ by $B$. ' $B$ followed by $A^{\prime} / 3$ causes White winning.

[A22 Ans] Black wins by $\langle 3 \rightarrow A$ or $(B ; C)\rangle$.
- same wherever 2
\# d/1 is met by White e, C/1 by A-etc and C/3 by 3 -etc. ' 2 followed by $f$ ' $/ 1$ is met by White 1 followed by d-etc.

[A23 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}\rangle$.
- if 4 elsewhere, Black wins by $(4 ; B)$
- if 2 elsewhere, Black wins by $\langle 4 \rightarrow \mathrm{~B}\rangle$ (\# <B $\rightarrow 4>$ suffers Nori-move) \# 4/1 is met by White 3 .

[A24 Ans] Black wins by $<3 \rightarrow(A(; B))>$.
- if 2 elsewhere, Black wins by $\langle\mathrm{A} \rightarrow 3$ or $(\mathrm{C} ; 3 ; \mathrm{D})>$ \# $3 / 1$ is met by White $D$, and next 1 and $A$ are blocked on the right edge. Both $A / 1$ and $A / 3$ are met by White f.

[A25(c125)] Black to play and win.
Hint: The situation after some moves seems very risky for Black, but Black can win.

[ $\mathbf{A 2 6}_{(\mathrm{c} 134)}$ ] Black to play and win.
Hint: To find the first move is easy for continuing attacks, but to find next correct move is not so easy, perhaps.

[A27 ${ }_{(\text {c059 })}$ ] Black to play and win.
Hint: "Look three moves ahead" is always important. White resists by doing the best he can.

[A28(c175) ${ }^{\text {] }}$ Black to play and win.
Hint: You must prepare the way to cope with White strong defense. Usual way is OK for this problem.

[A25 Ans] Black wins by $\langle 3 \rightarrow(A ; B)\rangle$. White 4-move against 3 is ineffective.
- if 2 elsewhere, Black wins by $\langle\mathrm{A} \rightarrow(3(; 2))\rangle$ \# A/3 is met by White $B$.

[A26 Ans] Black wins by $\langle 3 \rightarrow(A ; B)>$.
- same wherever 2
\# A/1 makes a good attacking form, but it isn't Threat. Both $A / 3$ and $B / 3$ are met by White $c$.

[A27 Ans] Black wins by $\langle 3 \rightarrow \mathrm{~A}$ or $(\mathrm{B} ; \mathrm{C})\rangle$.
- same if d/2
(\# B is met by White g ). if $A / 2$, Black wins by $<B \rightarrow 3$ or $C>$
\# $B / 1$ is met by White e, $3 / 1$ by $B$ (spot $A$ is $3-3$ ) and $B / 3$ by 4-move $f$.

[A28 Ans] Black wins by $\langle 5 \rightarrow$ A $>$.
- if 2 elsewhere, Black wins at 4 $\# 5 / 1$ is met by White b .

[A29 (c242) ] Black to play and win.
Hint: Black's second move is decisive for his winning.

[ $\left.\mathbf{A 3 0}_{(\mathrm{c} 127)}\right]$ Black to play and win.
Hint: The line of Four in final $4-3$ seems clear, but where is Three?

[ $\mathbf{A 3 1}_{(\mathrm{cos1)}}$ ] Black to play and win.
Hint: Black wins by VCF at last. The sequence is not repetition of Nori-move.

[A32 (c231) ] Black to play and win.
Hint: Though possible Threats of Black are not many and White may counterattack, Black should attack bravely.

[A29 Ans] Black wins by $\langle 3 \rightarrow(A(; B))$ or (C;D;E)>.
- same if $\mathrm{g} / 2$ (\# neither Black 2 nor F is 4-3). if $D / 2$, Black wins at $F$
\# Both C/3 and E/3 are met by White 3 .

[A30 Ans] Black wins by $\langle 3 \rightarrow$ A $>$.
- if 2 elsewhere, Black wins at 2
\# $3 / 1$ is met by White $b$, and next $A$ and 1 are met by White d and 4 -move c followed by A respectively. In each variation, Black suffers Nori-move or 4-4. Both $A / 1$ and $A / 3$ are met by White $d$.

[A31 Ans] Black wins by $<1 \rightarrow \mathrm{~A}$ or $(\mathrm{B} ; \mathrm{C} ; \mathrm{D} ; \mathrm{E} ; \mathrm{F})>$.
\# $\mathrm{B} / 1$ is met by White 1 . $\mathrm{F} / 1$ is met by White 1 , and next $G$ by White i. G/1 is met by White B, and next j by White E . When White plays 2 at h, Black cannot win by continuous Fours from A, repetition of Nori-move.

[A32 Ans] Black wins by $\langle 5 \rightarrow(\mathrm{~A} ; \mathrm{B})>$. White 4 -move against 5 is inveffective.
- if 4 elsewhere, Black wins by $\langle 5 \rightarrow$ A $\rangle$
- same wherever 2

[A33 (c229) ] Black to play and win.
Hint: Determine the first and second moves after well considering White defenses.

[ $\mathbf{A 3 4}_{(\mathrm{c} 200)}$ ] Black to play and win.
Hint: Find the first move which is excellent.

[ $\mathbf{A 3 5}_{(\mathrm{c} 235)}$ ] Black to play and win.
Hint: Black knows White will play Nori-move.

[ $\mathbf{A 3 6}_{(\mathrm{c} 162)}$ ] Black to play and win.
Hint: Against the strongest defense, Black wins by VCF of length 6 .

[A33 Ans] Black wins by $\langle 3 \rightarrow(\mathrm{~A}(; \mathrm{B}))>$.
- if 2 elsewhere, Black wins by $(B ; C)$ or $<\mathrm{A} \rightarrow(3(; \mathrm{D}))$ or (3(;2))>
\# $3 / 1$ is met by White $f$, and next 1 by White g. 'A followed by 1 '/1 is met by White e followed by 2 -etc.

[A34(c200) Ans] Black wins by $\langle 3 \rightarrow$ A $>$.
- if 2 elsewhere, Black wins in the same way, or wins by $(2 ; B)$ or ( $C ; D$ )
\# $2 / 1$ is met by White $1, B / 1$ by 1 and $E / 1$ by A-etc.

[A35 Ans] Black wins by $\langle 7 \rightarrow \mathrm{~A}$ or B$\rangle$, where A is open Four.
- if 4 elsewhere, Black wins at 5
- if 2 elsewhere, Black wins by $\langle 3 \rightarrow 5>$ \# 3/1 is met by White $c$.

[A36 Ans] Black wins by $<3 \rightarrow \mathrm{~A}$ or B or (A;C;D;E;B;F)>. The strongest defense against 3 is $g$.
- if 2 elsewhere, Black wins by $\langle 3 \rightarrow \mathrm{~A}$ or $\mathrm{B}>$ \# $3 / 1$ is met by White $h$ and $D / 1$ by 1 .


## 3 Middle Level VCT Problems


[ $\mathbf{B 0 1}_{(\mathrm{c} 109)}$ ] Black to play and win.
Hint: Play Three continuously.

[ $\left.\mathbf{B 0 2}_{(\mathrm{c} 234)}\right]$ Black to play and win.
Hint: Go toward the 4-3 spot carefully.

[ $\left.\mathbf{B 0 3}_{(\mathrm{c} 250)}\right]$ Black to play and win.
Hint: VCF after one move.

[ $\left.\mathbf{B 0 4}_{(\mathrm{c} 190)}\right]$ Black to play and win.
Hint: The first move is either Three or Mise-move.

[B01 Ans] Black wins by $\langle 5 \rightarrow(A ; B)\rangle$.

- if 4 elsewhere, Black wins by ( $4 ; \mathrm{C} ; \mathrm{A}$ )
- same wherever 2

[B02 Ans] Black wins by $\langle 7 \rightarrow \mathrm{~A}>$.
- if 4 elsewhere, Black wins by $\langle 7 \rightarrow 5$ or A>
- same wherever 2
\# 7/5 is met by White 5 .

[B03 Ans] Black wins by $\langle 1 \rightarrow(A ; B ; C ; D)>$.
'A followed by 1 '/1 also yields Black win, but it needs one more Black move though the same winning pattern.
\# D/1 is met by White C. C/ 1 is met by White D followed by 1 and so on. Each of 'B followed by C', 'B followed by D' and 'C followed by D' suffers 4-4.

[B04 Ans] Black wins by $\langle 5 \rightarrow$ A $\rangle$.
- if 4 elsewhere, Black wins by $<B \rightarrow 4>$ (in most cases Black wins by $\langle 5 \rightarrow \mathrm{~A}\rangle$ as well, but there is an exception in variations of 2 and 4)
- same wherever 2
\# $2 / 1$ is met by White c, and next 3 by White 5 .

[ $\left.\mathbf{B 0 5}_{(\mathrm{c} 247)}\right]$ Black to play and win.
Hint: 'Three followed by 4-3' is not correct due to Norimove.

[ $\mathbf{B 0 6}_{(\mathrm{c} 151)}$ ] Black to play and win.
Hint: Try to nullify the effect of White 4-move.

[ $\mathbf{B 0 7}_{(\mathrm{c} 140)}$ ] Black to play and win.
Hint: This is similar to [A21]. Basically the winning sequence is Three followed by 4-3, but some tricks are required.

[ $\mathbf{B 0 8}_{(\mathrm{c} 173)}$ ] Black to play and win.
Hint: Black should play 4-move or should not. White resists hard.

[B05 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}$ or B$\rangle$.
- if $\mathrm{d} / 4$, Black wins by $\langle\mathrm{C} \rightarrow \mathrm{B}\rangle$.
if 4 elsewhere, Black wins at 4 , or wins by $(A ; d)$
- if 2 elsewhere, Black wins at 4
\# $3 / 1$ is met by White $d$ and $A / 3$ by e-etc.

[B06 Ans] Black wins by $<3 \rightarrow A$ or $(B ; C)>$.
\# Both $3 / 1$ and $\mathrm{A} / 1$ are met by White 4 -move d followed by 1.

[B07 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}\rangle$.
A/5 also yields Black win, but it needs one more Black move though the same winning pattern.
- if 4 elsewhere, Black wins at A
- if 2 elsewhere, Black wins by $\langle 4 \rightarrow(B ; C ; 2)>$
$\# 3 / 1$ is met by White 4 , and next 1 by White $d$.

[B08 Ans] Black wins by $\langle 3 \rightarrow(A ; B)\rangle$.
White 4-move is ineffective through the procedure.
- if 2 elsewhere, Black wins at $C$, or wins by ( $(2 ;) A ; B)$
\# 3/1 is met by White 1 .

[ $\mathbf{B 0 9}_{(\mathrm{c} 245)}$ ] Black to play and win.
Hint: Avoid or overcome White Nori-move.

[ $\left.\mathbf{B 1 0}_{(\mathrm{c} 188)}\right]$ Black to play and win.
Hint: If you miss the order of moves, White defends strongly and frustrates your plan.

[ $\mathbf{B 1 1}_{(\mathrm{c} 131)}$ ] Black to play and win.
Hint: The sequence is a little long if White defends most strongly, but not difficult to look ahead.


Hint: Guess the $4-3$ spot, and go on steady and in correct order.

[B09 Ans] Black wins by $\langle 5 \rightarrow(\mathrm{~A} ; \mathrm{B})>$.
Black 4-move after 2 or 4 yields Black win as well, but each needs more moves though the same winning pattern.
White 4-move against 3 is ineffective.
- if 4 elsewhere, Black wins by ( $\mathrm{A} ; \mathrm{B}$ )
- if 2 elsewhere, Black wins by $(2 ; C)$
\# 2/1 is met by White 1 .
[B10 Ans] Black wins by $\langle 5 \rightarrow(A ; B)>$.
- if 4 elsewhere, Black wins by $\langle 5 \rightarrow(4 ; \mathrm{A})\rangle$
\# (2;C) suffers Nori-move. Both 5/1 and 5/3 are met by White d.

[B11 Ans] Black wins by $\langle 7 \rightarrow \mathrm{~A}$ or B$\rangle$, where A is open Four.
- if 4 elsewhere, Black wins at 5
- if 2 elsewhere, Black wins by $\langle 3 \rightarrow 5>$

[B12 Ans] Black wins by $\langle 5 \rightarrow A>$.
- if 4 elsewhere, Black wins by $\langle\mathrm{B} \rightarrow 4>$
- same wherever 2
\# $5 / 1$ is met by White $B$, and next 1 followed by 3 is met by White 2 followed by c. $5 / 3$ is met by White B, and next 3 by White c.

[ $\left.\mathbf{B 1 3}_{(\mathrm{c} 176)}\right]$ Black to play and win.
Hint: How do you treat the 4-4-3 spot? You must be able to judge whether a spot is 4-3 or not 4-3.

[B14(c157)] Black to play and win.
Hint: If you attack well, White cannot use 4-move effectively.

[B15(c089)] Black to play and win.
Hint: There are some candidates of Mise-move and Fukumi-move.

[ $\mathbf{B 1 6}_{(\mathrm{co19})}$ ] Black to play and win.
Hint: White will try to defend using Nori-move.

[B13 Ans] Black wins by $<1 \rightarrow \mathrm{~A}$ or $(\mathrm{B} ; \mathrm{C})$ or (D;E;F) or $(D ; A)$ or $(G ; A)>$.
\# $\mathrm{A} / 1$ is met by White $\mathrm{h}, \mathrm{E} / 1$ by $1, \mathrm{i} / 1$ by 1 -etc (spot $j$ is not $4-3$ ) and $B / 1$ by $i$-etc.

[B14 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}$ or $(\mathrm{B} ; \mathrm{C})>$.
Any White 4-move is ineffective through the procedure.
- if 4 elsewhere, Black wins at B
- same wherever 2
\# $3 / 1$ is met by White $d$-etc, $B / 5$ by 4 -move $d$ followed by e and $C / 5$ by 4 -move e.

[B15 Ans] Black wins by $\langle 3 \rightarrow(\mathrm{~A} ; \mathrm{B})>$.
White 4 -move against 3 is ineffective.
- if 2 elsewhere, Black wins by $(2 ; C)$ or $(A ; B ; D)$ or $\langle 3 \rightarrow$ D> or $\langle\mathrm{E} \rightarrow \mathrm{C}$ >
\# $2 / 1$ is met by White C. $3 / 1$ is met by White $B$, and next 2 or 1 by White $\mathrm{E} . \mathrm{D} / 1$ is met by White C or A , and next 3 by White B.

[B16 Ans] Black wins by $\langle 3 \rightarrow \mathrm{~A}$ or (B;C)>.
- if 2 elsewhere, Black wins by $<\mathrm{D} \rightarrow \mathrm{E}>$

$$
(\langle\mathrm{E} \rightarrow \mathrm{D}\rangle \text { is also possible })
$$

\# D/1 is met by White A and $\mathrm{C} / 3$ by 4 -move 3 .

[B17(c098) ${ }_{(0)}$ Black to play and win.
Hint: There are always three spots for blocking Three.

[B18(c061) ${ }^{\text {(che }}$ Black to play and win.
Hint: Play Threes continuously toward final VCF.

$\left[\mathbf{B 1 9}_{(\mathrm{c} 178)}\right]$ Black to play and win.
Hint: We can easily guess the final winning pattern, but well-considered order of moves is necessary.

[ $\left.\mathbf{B 2 0}_{(\mathrm{c} 142)}\right]$ Black to play and win.
Hint: Black cannot win by immediate 4-3. Try to nullify the effect of White 4-move.

[B17 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}\rangle$.

- same wherever 4
- if 2 elsewhere, Black wins by $\langle 3 \rightarrow(B ; C)\rangle$ \# (B;C) after 3 suffers Nori-move.

[B18 Ans] Black wins by $\langle 5 \rightarrow(A ; B(; C))\rangle$.
- same if e/4 (\# neither D nor 4 is 4-3). if $\mathrm{A} / 4$, Black wins at D
- same wherever 2
$\# 3 / 1$ is met by White $D, 4 / 1$ by $D$ and $D / 1$ by 4 .

[B19 Ans] Black wins by $\langle 5 \rightarrow A$ or $(B ; A ; C)\rangle$. Black 4-move B before 5 needs one more Black move.
- if 2 elsewhere, Black wins by $\langle 5 \rightarrow$ A $\rangle$
\# $5 / 1$ is met by White $d$ and $5 / 3$ by 4 -move $d$. All of $A / 1, A / 3$ and $A / 5$ are met by White $C$.

[B20 Ans] Black wins by $\langle 3 \rightarrow \mathrm{~A}\rangle$.
White 4-move is ineffective through the procedure. Black 3 is a single Three, because spot $B$ is 4-4.
- same wherever 2
\# C/ 1 is met by White 3 and $3 / 1$ by $C$.

[ $\left.\mathbf{B 2 1}_{(\mathrm{c} 196)}\right]$ Black to play and win.
Hint: Except the strongest defense against 1, Black wins by VCF.

[ $\left.\mathbf{B 2 2} 2_{(c 244)}\right]$ Black to play and win. Hint: The first move is neither Three nor Four.

$\left[\mathbf{B 2 3}_{(\mathrm{c} 184)}\right]$ Black to play and win. Hint: Good combination of Threes.

[B24(c199)] Black to play and win.
Hint: Black aims to make 4-3 in lower-right side.

[B24 Ans] Black wins by $\langle 5 \rightarrow A>$.
- if 4 elsewhere, Black wins in the same way, or wins by ( $\mathrm{B} ; \mathrm{C} ; 5 ; \mathrm{A}$ )
- if 2 elsewhere, Black wins at $B$
\# $B / 1$ is met by White 2 , and next 3 by White $4.5 / 3$ is met by White d , and next e by White f . $\mathrm{g} / 3$ is met by White d, and next e by White 5-etc.

[ $\mathbf{B 2 5}_{(\mathrm{c} 192)}$ ] Black to play and win.
Hint: Black can defeat Nori-move by good order of moves.

[ $\left.\mathbf{B 2 6}_{(\mathrm{c} 147)}\right]$ Black to play and win.
Hint: Black does not need to be afraid of White Four.

[ $\left.\mathbf{B 2 7}_{(\mathrm{c} 116)}\right]$ Black to play and win.
Hint: Black plays his first move so that White cannot make Four.

[B28(c064)] Black to play and win.
Hint: Guess the $\overline{4}-3$ spot and go on. Correct sequence has few variations.

[B25 Ans] Black wins by $\langle 5 \rightarrow(\mathrm{~A} ; \mathrm{B})>$.
White 4-move against 3 and 5 is ineffective.
'A followed by $\mathrm{B}^{\prime} / 5$ also yields Black win, but it needs more moves though the same winning pattern.
- same wherever 4
- if 2 elsewhere, Black wins at A
\# $3 / 1$ is met by White $c, 5 / 1$ by $d, 5 / 3$ by $d$ and $B / 5$ by $A$.

[B26 Ans] Black wins by $\langle 5 \rightarrow$ A or B>.
- if 4 elsewhere, Black wins by ( $C ; B ; 4$ )
- if 2 elsewhere, Black wins by $\langle 3 \rightarrow(C ; B(; 2)>$ \# $3 / 1$ is met by White $d$ and $5 / 3$ by $C$.

[B27 Ans] Black wins by $<7 \rightarrow \mathrm{~A}$ or $\mathrm{B}>$, where A is open Four.
- same wherever 4.

4-move 6 before 4 does not change the situation

- if 2 elsewhere, Black wins by $\langle 3 \rightarrow 5>$
\# 5/ 1 is met by White 1 -etc.

[B28 Ans] Black wins by $\langle 5 \rightarrow$ A $\rangle$.
- same wherever 4
\# $3 / 1$ is met by White $1.5 / 1$ is met by White $b$, and next 1 followed by A is met by White 2 followed by c .

[B29(c074) ${ }^{\text {(c) }}$ Black to play and win.
Hint: Even if White plays Nori-move, Black also can play Nori-move against it.
[ $\left.\mathbf{B 3 0}_{(\mathrm{c} 224)}\right]$ Black to play and win.
Hint: A glance at the problem shows some hopeful candidates, but the correct sequence might not be included in those candidates.

[B31 ${ }_{\text {(c232) }}$ ] Black to play and win.
Hint: The first move is very important.

[B32 (co65) ${ }^{\text {] }}$ Black to play and win.
Hint: Three of final 4-3 is on the edge of board.

[B29 Ans] Black wins by $\langle 3 \rightarrow(\mathrm{~A}(; \mathrm{B}))\rangle$.
- same wherever $2 \quad(\langle A \rightarrow 3\rangle$ is also possible) \# $3 / 1$ is met by White $A, A / 1$ by $c$ and $A / 3$ by $c$.

[B30 Ans] Black wins by $\langle 5 \rightarrow(\mathrm{~A} ; \mathrm{B})\rangle$.
- if $d / 4$, Black wins by $\langle C \rightarrow 5$ or $(A ; B ; 5)$ or $4>$, where 4 is open Four after White 5 .
if ' $C$ followed by e or $f$ ' $/ 4$. Black wins by $(4 ; 5)$. if 'e or $f$ ' $/ 4$, Black wins at 4
\# $4 / 1$ is met by White $C$, and next $B$ and $h$ are met by White $g$ and 3 respectively. $5 / 1$ is met by White $i$ and $3 / 1$ by 1 .

[B31 Ans] Black wins by $\langle 5 \rightarrow$ A $\rangle$.
- if 4 elsewhere, Black wins by $<\mathrm{B} \rightarrow \mathrm{C}>$

$$
(\langle C \rightarrow B\rangle \text { is also possible })
$$

- if $\mathrm{E} / 2$, Black wins by Mise-move 3 followed by $\langle B \rightarrow C$.
if $\mathrm{A} / 2$ or $\mathrm{F} / 2$, Black wins by Mise-move B followed by $\langle 3 \rightarrow C$.
if 2 elsewhere, Black wins by $(\mathrm{A} ; \mathrm{E})$ or $<\mathrm{D} \rightarrow 2$ or F>
\# $\mathrm{B} / 1$ is met by White 2 and $5 / 1$ by E -etc.

[B32 Ans] Black wins by $\langle 3 \rightarrow(\mathrm{~A} ; \mathrm{B})$ or (C;D;E;F)>. White 4-move is ineffective through the procedure.
- if 2 elsewhere, Black wins by ( $\mathrm{G} ; \mathrm{H} ; 3$ )
\# $\mathrm{H} / 1$ is met by White 3 -etc, $\mathrm{G} / 1$ by H -etc and $\mathrm{A} / 3$ by E-etc.

$\left[\mathbf{B 3 3}_{(\mathrm{c} 055)}\right]$ Black to play and win.
Hint: There are three lines of making Three. All of them are used finally, but the order is a problem.

[B34(c054)] Black to play and win.
Hint: After playing Three twice, Black wins by VCF.

[ $\left.\mathbf{B 3 5}_{(\mathrm{c} 236)}\right]$ Black to play and win.
Hint: Black's second move is very good.

[ $\left.\mathbf{B 3 6}_{(\mathrm{c} 143)}\right]$ White to play and win.
Hint: White forces Black to play a forbidden move.

[B33 Ans] Black wins by $<3 \rightarrow A>$.
- same wherever $2 \quad(\langle A \rightarrow 3\rangle$ is also possible $)$ $\# 3 / 1$ is met by White $d$ and $A / 1$ by e. $A / 3$ is met by White 4-move c (neither 3 nor $B$ is 4-3).

[B34 Ans] Black wins by $\langle 3 \rightarrow(A ; B ; C ; D)>$.
- if 2 elsewhere, Black wins by $\langle 3 \rightarrow(A ; B ; C)>$ \# 3/1 is met by White e.

[B35 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}\rangle$.
- if 4 elsewhere, Black wins in the same way, or wins by $(4 ; B)$ or (C;D)
- same wherever 2
\# '4 followed by 3 '/3 is met by White 5 .

[B36 Ans] After 7 Black is forced to play 4-4 at X.
- if 4 elsewhere, White wins in the same way
- if 2 elsewhere, White wins by (2;A)
\# $2 / 1$ is met by Black 1 and $A / 1$ by 1-etc.

[ $\left.\mathbf{B 3 7}_{(\mathrm{c} 112)}\right]$ Black to play and win.
Hint: Increase potential power. Remember the fact that there are three spots to block Three.

[B38(c197)] Black to play and win.
Hint: Use the candidates of Four effectively.

[ $\left.\mathbf{B 3 9}_{(\mathrm{c} 177)}\right]$ Black to play and win.
Hint: Attack using Three continuously, with full attention to White defense.

$[\mathbf{B 4 0}(\mathrm{c} 152)]$ Black to play and win.
Hint: It is clear that White prepares Nori-move. The way how it is overcome is asked to you.

[B37 Ans] Black wins by $<3 \rightarrow \mathrm{~A}$ or $(\mathrm{B} ; \mathrm{C} ; \mathrm{D} ; \mathrm{E})$ or (D;F;G)>.
$(\mathrm{B} ; \mathrm{C} ; \mathrm{H} ; \mathrm{E})$ is also possible, but the above is enough.
- if 2 elsewhere, Black wins by $(2 ; B ; G ; A)$ or $\langle G \rightarrow A$ or B>
\# $B / 1$ is met by White 1 , and next G by White $i$.
[B38 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}$ or (B;C;D)>.
- if 4 elsewhere, Black wins at A
- if $5 / 2$, Black wins by $\langle\mathrm{E} \rightarrow(\mathrm{F} ; \mathrm{G} ; \mathrm{D})>$
(White 4-move is ineffective).
if $\mathrm{F} / 2$, Black wins by $<3 \rightarrow$ (A (;5))>
\# $3 / 1$ is met by White $E$ and $D / 3$ by $h$.

[B40 Ans] Black wins by 7 because of two Threes.
- if $5 / 2$, Black wins by A (blocked by White 2 ) followed by $\langle B \rightarrow 7$ or $3>$, where 7 is open Four
(White 4-move is ineffective). if 2 elsewhere, Black wins at A, or wins by (3;5 (;2))
\# Both $3 / 1$ and $5 / 1$ are met by White 4 -move 1 followed by White 6 . Both $7 / 3$ and $7 / 5$ are met by White 4 -move 5 followed by White A.

[ $\left.\mathbf{B 4 1} 1_{(c 132)}\right]$ Black to play and win.
Hint: Use the small board widely.

[B42 (c168) ] Black to play and win.
Hint: Jump, jump, ... and you will succeed.

[B43(c101) ${ }^{\text {(c) }}$ Black to play and win.
Hint: Continuous Fours suffer Nori-move. Currently forbidden spot will be used successfully.

[B44(c093) ${ }^{\text {] }}$ Black to play and win.
Hint: It is one of Black's aims to revive fake Three.

[B41 Ans] Black wins by $\langle 7 \rightarrow$ A $>$.
- if 6 elsewhere, Black wins by (B;7;A)
- if 2 elsewhere, Black wins at A
\#' 3 followed by 5 ' $/ 1$ is met by White 4 followed by 6 . $6 / 1$ is met by White $B$ and $7 / 5$ by A-etc.

[B42 Ans] Black wins by $\langle 7 \rightarrow(A ; B ; C)\rangle$.
White 4-move against 7 is ineffective.
- if 4 elsewhere, Black wins by $\langle 7 \rightarrow 5$ or $(A ; B ; C)>$
- if 2 elsewhere, Black plays at B, and aims to win by $(2 ; \mathrm{D} ; \mathrm{C})$ or ( $\mathrm{C} ; 2 ; 5 ; 4$ ). Thereafter Black wins by $<3 \rightarrow(A ; 7 ; 5)$ or $(A ; 7 ; C)$ or $(A ; 7 ; 2 ; D)$ or (A;7;5;E;2)>
\# $2 / 1$ is met by White 1 and $7 / 5$ by 4 -move 5 .

[B43 Ans] Black wins by $\langle 5 \rightarrow$ A $>$.
This is similar to [A31] in Vol.2, but more difficult.
- if 2 elsewhere, Black wins by ( $4 ; \mathrm{A}$ )
\# (4;5) suffers Nori-move. After 'Black 4-move 3'/1, 1 is met by White b and 5 by c .

[B44 Ans] Black wins by $<1 \rightarrow \mathrm{~A}$ or $(\mathrm{B} ; \mathrm{C})$ or $(\mathrm{A} ; \mathrm{D})>$, where ( $\mathrm{A} ; \mathrm{D}$ ) revives fake Three on vertical line to real Three.
\# ' B followed by 1 '/1 is met by White h . After D/1 (White must defend against currently real Three), Black E is met by White g. F/1 is met by White A.

$[\mathbf{B 4 5}(\mathrm{c} 181)]$ Black to play and win.
Hint: Two White stones on the lowest line make this problem difficult.

[B46(c068) ${ }^{\text {] }}$ Black to play and win.
Hint: You must overcome White 4-move.

[ $\left.\mathbf{B 4 7}{ }_{(\mathrm{c} 021)}\right]$ Black to play and win.
Hint: There are two kinds of fake 'Three followed by 4-3'. The order of moves is important.

[B48(c087) ${ }^{\text {] }}$ Black to play and win.
Hint: double-Mise-move is not correct. The first move has various aims.

[B45 Ans] Black wins by $\langle 9 \rightarrow$ A>.
- if 4 elsewhere, Black wins at 5
- if 2 elsewhere, Black wins by $\langle 5 \rightarrow 3$ or ( $\mathrm{B} ; \mathrm{C} ; 2 ; 9$ ) > \# $5 / 1$ is met by White $7,5 / 3$ by 7 and $9 / 3$ by d .

[B46 Ans] Black wins by <3 $\rightarrow(A ; B ; C)\rangle$.
- if 2 elsewhere, Black wins by $\langle\mathrm{D} \rightarrow \mathrm{E}>$ (\# <E $\rightarrow \mathrm{D}>$ is not correct)
\# $\mathrm{D} / 1$ is met by White f and $\mathrm{E} / 1$ by g. Both $\mathrm{D} / 3$ and $\mathrm{E} / 3$ are met by White 4 -move f .

[B47 Ans] Black wins by $\langle 5 \rightarrow$ A $\rangle$.
- same wherever $4 \quad(\langle A \rightarrow 5\rangle$ is also possible)
- if 2 elsewhere, Black wins by ( $2 ; \mathrm{B}$ )
\# $3 / 1$ is met by White $B$, and next 1 and $A$ are met by White d and e respectively. $2 / 1$ is met by White 1 , $B / 1$ by $3, f / 1$ by B-etc and $A / 5$ by $c$.

[B48 Ans] Black wins by $\langle 5 \rightarrow$ A $>$.
- same wherever 4
- if 2 elsewhere, Black wins by $(2 ; \mathrm{C} ; \mathrm{A})$ or $\langle 3 \rightarrow \mathrm{~B}\rangle$ or $\langle C \rightarrow A$ >
\# $3 / 1$ is met by White 4 , and next 1 and 5 are met by White B and 1 respectively. Both $C / 1$ and $5 / 1$ are met by White 1 .


## 4 Advanced Level VCT Problems


[ $\mathbf{C 0 1} 1_{\text {(co84) }}$ ] Black to play and win.
Hint: Keep correct order, play 4-move if necessary, and ...
[ $\left.\mathbf{C 0 2}{ }_{\text {(c067) }}\right]$ Black to play and win. Hint: Black's second move is good.

[ $\left.\mathbf{C 0 3}{ }_{(\mathrm{c} 255)}\right]$ Black to play and win.
Hint: Go on steadily, paying attention to White Norimove and 4-move.

[C04(c144)] White to play and win.
Hint: Placement of White stones is same as [B36]. To use White's privilege is also same, but the kind is different.

[C01 Ans] Black wins by $\langle 7 \rightarrow \mathrm{~A}>$.

- if 4 elsewhere, Black wins by $\langle 7 \rightarrow(5 ; \mathrm{A})>$
- same wherever 2
\# $3 / 1$ is met by White 4 , and next 1 by White 4 -move b. $7 / 5$ is met by White 4 -move b.

[C02 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}\rangle$.
- if 4 elsewhere, Black wins in the same way, or wins by $(B ; C)$ or $(4 ; D ; E)$
- if 2 elsewhere, Black wins by ( $\mathrm{F} ; \mathrm{A}$ )
$\# 3 / 1$ is met by White 1 -etc, $D / 3$ by E-etc and $A / 5$ by $C$.

[C03 Ans] Black wins by $\langle 5 \rightarrow(A ; B)\rangle$.
$<A \rightarrow(5 ; B)>$ is also possible after White 4.
- if 4 elsewhere, Black wins by $\langle 5 \rightarrow \mathrm{~A}\rangle$
(<A $\rightarrow 5\rangle$ is also possible)
- if $\mathrm{d} / 2$, Black wins by $\langle\mathrm{C} \rightarrow 5$ or A$\rangle$.
if 2 elsewhere, Black wins by $(2 ; A)$ or $(2 ; C ; 5)$
\# A/ 1 is met by White e, $A / 3$ by e and $5 / 3$ by $f$.

[C04 Ans] After 5, White wins by 3-3 at A.
- same wherever 4
- if 2 elsewhere, White wins by $(2 ; 4)$ $\# 2 / 1$ is met by Black $1,4 / 1$ by 1 -etc and $A / 3$ by $b$.

[ $\mathbf{C 0 5}_{(\mathrm{c} 201)}$ ] Black to play and win.
Hint: Various traps of Nori-move are prepared. The order of moves is important.

[ $\left.\mathbf{C 0 6}{ }_{(\mathrm{c} 123)}\right]$ Black to play and win.
Hint: Where is Four of the final 4-3? It's lower right.

$\left[\mathbf{C 0 7}{ }_{\text {(c254) }}\right]$ Black to play and win.
Hint: Strong Fukumi-move is necessary in order to avoid Nori-move.

[ $\left.\mathbf{C 0 8}_{(\text {со73) }}\right]$ Black to play and win.
Hint: There are some hopeful sequences, but ... Broken Threes are used effectively.

[C05 Ans] Black wins by $\langle 5 \rightarrow(A ; B ; C)\rangle$.
- if 4 elsewhere, Black wins by (4;D)
- if 2 elsewhere, Black wins by $\langle 4 \rightarrow$ D>
\# $3 / 1$ is met by White 4 , and next 1 by White A. 4/1 is met by White $3,4 / 3$ by 3 and $\mathrm{D} / 3$ by 5 . $5 / 3$ is met by White D , and next 3 by White e.
[C06 Ans] Black wins by $\langle 7 \rightarrow \mathrm{~A}>$.
- same wherever 6 and 4
- if 2 elsewhere, there are many ways to win. For example, if $B / 2$, Black plays $D, 4$ and $C$ followed by 4-3 at 5
\# $2 / 1$ is met by White D and $\mathrm{D} / 1$ by 2 .

[C07 Ans] Black wins by $<3 \rightarrow \mathrm{~A}$ or $(\mathrm{B} ; \mathrm{C} ; \mathrm{D} ; \mathrm{E}(; \mathrm{F}))$ or (B;G;D;A;H)>.
The strongest defense against 3 is m .
- if 2 elsewhere, Black wins by $\langle J \rightarrow K>$ \# C/3 is met by White $m, A / 3$ by $n$ and $J / 3$ by o.

[C08 Ans] Black wins by $\langle 5 \rightarrow(A ; B)\rangle$.
- if 4 elsewhere, Black wins by ( $4 ; \mathrm{A} ; \mathrm{B} ; \mathrm{C}$ ).
(\# (4;D) makes 4-3-3)
- if 2 elsewhere, Black wins by $\langle\mathrm{D} \rightarrow 4\rangle$.
(\# <4 $\rightarrow \mathrm{D}\rangle$ is not correct)
\# $3 / 1$ is met by White $4,4 / 1$ by $3, C / 3$ by 4 and $5 / 3$ by 4 -move 3 . $\mathrm{D} / 3$ is met by White C , and Black is forced to play 3-3.

[ $\mathbf{C 0 9} \mathbf{9}_{(2217)}$ ] Black to play and win.
Hint: White has Three, and we see a forbidden 3-3 spot. How should Black do?

[ $\left.\mathbf{C 1 0}_{(\mathrm{c} 159)}\right]$ Black to play and win.
Hint: Black forces White to play 4-move, and Black uses the supplemented Black stone effectively.

[C11 ${ }_{(\mathrm{c} 155)}$ ] Black to play and win.
Hint: White might get some 4 -move spots. Black should be careful about White 4-move and the order of moves.

[ $\mathbf{C 1 2}$ (c138) ] Black to play and win.
Hint: The first move is a broken Three. Consider all variations.

[C09 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}$ or B or C or D$\rangle$. After White defends against Four of A, B, C or D, Black can play open Four at E or F.
Note that 5 is not even a single Three.
- same wherever 4
\# $\mathrm{D} / 1$ is met by White 5 -etc.

[C10 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}$ or B$\rangle$, where A is open Four.
- if 4 elsewhere, Black wins by ( $4 ; \mathrm{C}$ ) (horizontal Three is revived)
- if White blocks Three without playing 4-move 2, Black wins at A. if $3 / 2$, Black gets new $4-3$ spot $A$
\# 3/1 is met by White A, and next d by White C. $4 / 1$ is met by 'White 2 , Black 3 and White 1 ', and next 5 is met by White C. d/1 is met by 'White 3, Black 2 and White A-etc'.

[C11 Ans] Black wins by $\langle 7 \rightarrow(\mathrm{~A} ; \mathrm{B})>$.
- same wherever 6
- if 2 elsewhere, Black wins in the same way, or wins at 4
\# $4 / 1$ is met by White $2,5 / 3$ by 4 -move c and $7 / 5$ by 4 -move c followed by 5 .

[C12 Ans] Black wins by $\langle 7 \rightarrow$ A $>$.
- if 4 elsewhere, Black wins by $\langle 7 \rightarrow \mathrm{~A}\rangle$
- if 2 elsewhere, Black wins by $\langle B \rightarrow(6: 3)\rangle$ (\# when A/2, Black 3 or 6 is met by White c) \# $3 / 1$ is met by White $c$, and next 1 by White $A$. $B / 3$ is met by White $7,6 / 3$ by $B$-etc and $7 / 3$ by $B$.

[C13 $\left.{ }_{(\mathrm{c} 186)}\right]$ Black to play and win.
Hint: If you feel too smoothly, you might fail due to a 4-4 spot.

[C14(c213)] Black to play and win.
Hint: The first move is a broken Three.

[ $\mathbf{C 1 5} \mathbf{( c 2 4 3 )}$ ] Black to play and win.
Hint: You must consider carefully correct and incorrect sequences as well. The correct sequence has few variations.

[C16 (c253) ] Black to play and win.
Hint: A solution key is to find the way to use the currently forbidden spot, and it is necessary to consider whether a spot is forbidden or not.

[C13 Ans] Black wins by $\langle 7 \rightarrow((\mathrm{~B} ;) \mathrm{A})\rangle$.
- if 6 elsewhere, Black wins by $(\mathrm{C} ; 6 ; 7)$ or $\langle\mathrm{A} \rightarrow 7$ > or $\langle 7 \rightarrow 6>$
- if 2 elsewhere, Black wins at 2 , or wins by $<\mathrm{D} \rightarrow 7>$ \# $2 / 1$ is met by White $D, 5 / 3$ by 3 and $6 / 3$ by $5.7 / 3$ is met by White e, and next 'A followed by 5 ' and single 5 cause forbidden 4-4 spot.

[C14 Ans] Black wins by $\langle 5 \rightarrow(A ; B)>$.
- if 4 elsewhere, Black wins by ( $\mathrm{A} ; \mathrm{C} ; 4$ ) or ( $\mathrm{A} ; \mathrm{C} ; \mathrm{D}$ ) or ( $\mathrm{E} ; \mathrm{F}$ )
- if $G / 2$, Black wins by $F$ followed by $\langle 3 \rightarrow A>$.
if $E / 2$, Black wins by $<3 \rightarrow A$ or ( $G ; D ; 4$ ) or $(\mathrm{G} ; \mathrm{A} ; 5 ; \mathrm{B} ; \mathrm{F})$ or $(\mathrm{A} ; \mathrm{C} ; 4)>$
\# F/1 is met by White B, and next 1 by White 2. A/1 is met by White 1 -etc, $C / 3$ by 3 and $F / 3$ by B.

[C15 Ans] Black wins by $\langle 9 \rightarrow$ A>.
- if 6 elsewhere, Black wins by $(6 ; B)$
- if 2 elsewhere, Black wins by $(2 ; 4)$
\# $2 / 1$ is met by White $1.9 / 1$ is met by White c, and next 1 by White 8 . The sequence Black 3, White 4 , Black 5, White 6 and Black 1 is met by White $8.9 / 3$ is met by White d.

[C16 Ans] After Black 5, Black wins by A (vertical Three revived), by B (if White 6 is $A$ or $E$ ), by ( $C ; B$ ), by ( $D ; B$ ), or by open Four $E$ (if White 6 is $B$ ).
- if White blocks Three of 3, Black wins at B
- if 2 elsewhere, Black wins by ( $\mathrm{C} ; \mathrm{B}$ )
\# Both $3 / 1$ and $\mathrm{E} / 1$ are met by White 1 -etc.

[ $\left.\mathbf{C 1 7} 7_{\text {(c237) })}\right]$ Black to play and win.
Hint: This problem requires that you can decide whether a spot is forbidden or not.

[C18 ${ }_{\text {(co79) }}$ ] Black to play and win.
Hint: White resists strongly. In this case, White plays on the board edge.

[C19 ${ }_{\text {(co96) })}$ ] Black to play and win.
Hint: Does it seem easy? White has strong defenses.

[ $\mathbf{C 2 0}{ }_{(1169)}$ ] Black to play and win.
Hint: Black will play VCF both in main line and in some variations. Those VCF sequences are not too short.

[C17 Ans] Black wins by $\langle 3 \rightarrow \mathrm{~A}$ or B$\rangle$, where both $A$ and $B$ are open Four.
Black 1 is not 3-3 because spot $A$ is 4-3-3. Black $A$ after 3 is not 4-3-3 because spot $B$ is 4-4 or White stone.
- if 2 elsewhere, Black wins at 2
\# $B / 1$ is met by White $c$, and next $d$ by White 2 . e/3 is met by White f and $\mathrm{g} / 3$ by A-etc.

[C18 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}\rangle$.
Against Black 5, White 4-move $B$ is interesting defense. It blocks Black $4-3$ at $A$ (spot C is 4-4). To White's regret, Black 4-move D revives 4-3 at A. So White 4move $B$ is ineffective.
- if 4 elsewhere, Black wins by ( $\mathrm{E} ; \mathrm{C} ; \mathrm{A}$ )
- if 2 elsewhere, Black wins at 2 or wins by $<\mathrm{F} \rightarrow 2$ or $(3 ; B ; A ; G)>$
\# $2 / 1$ is met by White $4, F / 1$ by $B, 5 / 1$ by $A$ and $5 / 3$ by $A$. $C / 3$ is met by White $k$, and next 3 is met by White 4 -move J followed by F. Neither $(E ; A ; C)$ nor $(H ; F ; 5)$ after 4 is correct due to Nori-move.

[C19 Ans] Black wins by $\langle 7 \rightarrow(\mathrm{~A} ; \mathrm{B})>$.
- if 4 elsewhere, Black wins at 6 , or wins by $(B(; C))$
- if 2 elsewhere, Black wins at B
\# D/ 1 is met by White e-etc, $7 / 1$ by D-etc, $7 / 5$ by 4 -move 5 and $\mathrm{A} / 7$ by f.

[C20 Ans] Black wins by $<5 \rightarrow(A ; B ; C)$ or (C;D;A;E;B)>.
White 4-move against 3 and 5 is ineffective.
- if 4 elsewhere, Black wins by ( $\mathrm{F} ; \mathrm{G} ; \mathrm{H} ; \mathrm{J} ; 5$ )
- if 2 elsewhere, Black wins by 5 followed by <A $\rightarrow$ B
\# 3/1 is met by White A, and next 1 by White H. A/ 1 is met by White 3 , and next 1 by White $2.5 / 3$ is met by White D, and next 3 and $A$ are met by White $A$ and 3 respectively.

[ $\left.\mathbf{C 2 1} 1_{(\text {co63 })}\right]$ Black to play and win.
Hint: Use upper and lower lines effectively. Be careful until final winning 4-3.

[ C22 ${ }_{(\mathrm{co20})}$ ] Black to play and win.
Hint: You must decide whether a spot is winning 4-3 or not, and find what to do if you do not think it as winning 4-3.

[C23 $\left.{ }_{(\text {co16 })}\right]$ Black to play and win.
Hint: The first move is not Three.

[C24(c167) ${ }^{\text {] }}$ Black to play and win.
Hint: White defends using Nori-move repeatedly.

[C21 Ans] Black wins by $\langle 7 \rightarrow \mathrm{~A}\rangle$.
- if $5 / 4$, Black wins by $(4 ; B)$. if $6 / 4$, Black wins by $\langle C \rightarrow A$ or $B\rangle$
- same wherever 2 , except that 4 -move 5 is unnecessary
\# A/ 1 is met by White $\mathrm{d}, \mathrm{C} / 3$ by $4, \mathrm{~A} / 3$ by d, $4 / 3$ by $C$ and $7 / 5$ by 5 .

[C22 Ans] Black wins by $\langle 5 \rightarrow \mathrm{~A}$ or B$\rangle$.
- if 4 elsewhere, Black wins in the same way, or wins by ( $\mathrm{C} ; \mathrm{D}$ ) or ( $\mathrm{E} ; \mathrm{F}$ )
- if 2 elsewhere, Black wins at B
\# G/1 is met by White 4 -move 3 followed by 1 -etc. $\mathrm{F} / 1$ is met by White $1,4 / 1$ by 1 and $A / 5$ by $h$. Neither B/5 nor $G / 5$ is 4-3.

[C23 Ans] Black wins by $\langle 3 \rightarrow(A ; B)>$.
- if 2 elsewhere, Black wins by $(A ; C ; D(; E))$, (A;C;B;F) or $\langle 3 \rightarrow G>$
\# $3 / 1$ is met by White $h, C / 1$ by $D, D / 1$ by $i$ and $B / 1$ by 1 -etc.

[C24 Ans] Black wins by $\langle 7 \rightarrow(A ; B ; C ; D)>$.
D not only blocks White Nori-move but also cancels 4-4 at spot E.
White 4-move against 7 is ineffective.
- if 6 elsewhere, Black wins at C
- if 2 elsewhere, Black wins at 4
\# 5/1 is met by White $f$ and $7 / 5$ by $g$.


## 5 VCF Problems


[D01(d016) ] Black to play and win by continuous Fours. Hint: It may be easy to look ahead, because the similar placement may appear in real games.

[D02 ${ }_{\text {(do10) }}$ ] Black to play and win by continuous Fours. Hint: VCF sequence is 8 in length.

[D03 ${ }_{(\mathrm{d} 015)}$ ] White to play and win by continuous Fours. Hint: VCF sequence is 7 in length. Black is forced to play a forbidden move.

[D04(d014)] White to play and win by continuous Fours. Hint: VCF sequence is 10 in length, the longest in author's works.

[D01 Ans] Black wins by ( $1 ; 2 ; \ldots ; 7$ ).
Perhaps you had little trouble.

[D02 Ans] Black wins by ( $1 ; 2 ; \ldots ; 8$ ).
White defense against Black 7 is Four. Black 8 defends against it and is also Four.

[D03 Ans] White wins by ( $1 ; 2 ; \ldots ; 7$ ).

## Spot X is forbidden 4-4.


[D04 Ans] White wins by $(1 ; 2 ; \ldots ; 10)$.
Do you think that it is possible to make VCF problems whose solutions are more than 10 in length?

## References

[1] Mano,Y.: "Introduction to $6 \times 6$-Board Renju Problems (1)\&(2)", The Renju Sekai, Vol. 57 No.11\&12, Nov.\&Dec. 2011 (in Japanese).
[2] Web site on $6 \times 6$-Board Renju Problems, http://www016.upp.so-net. ne.jp/TokaiRenju2/JirTa/xxx (where $\mathrm{xxx}=6 \mathrm{x} 6 \mathrm{~J} . \mathrm{htm}$ in Japanese, or 6x6E.htm in English).
[3] Mano,Y.: "6×6-Board Renju Problems - Collection-1", Tokai Renju Association in Japan, Nov. 2011 (2nd ed. Dec.2012) (in Japanese).
[4] Mano,Y.: "6×6-Board Renju Problems-Collection-2~5", Tokai Renju Association in Japan, Mar.~Dec. 2012 (in Japanese).

Solution to the front cover problem


After 3, Black wins by 4-3 at A same if 2 elsewhere \# failure if played 3 followed by 1


[^0]:    ${ }^{1}$ The mark 'cxxx' in brackets is the problem identifier used in Web site.

[^1]:    ${ }^{2}$ Paragraph following ' $\#$ ' is some annotation on the attacker failure moves.
    3 The suffix '-etc' is appended, if there exist other effective defense moves.
    4 The description on variations assumes White will block Three and Mise-move. If White does not block them, Black makes open Four or 4-3, of course.

[^2]:    ${ }^{5}$ If one or more extra 4-moves are necessary depending on defenses, the VCF sequence is represented using nested parentheses like ' $(A ; B(; C))$ '.

[^3]:    6 'Ineffective 4-move' means the defense 4-move, which makes new attacker's Threat and makes impossible to defend against both existing and new Threats at the same time.

