Move Value
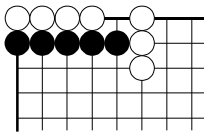
►In a local gote endgame, the *move value* is half the difference of the count of Black's follow-up position and the count of White's follow-up position.

In other words, the move value is calculated as follows. First, calculate the count of the follow-up position after Black's start <u>minus</u> the count of the follow-up position after White's start. Second, divide by 2.

This is the modern definition of the move value of a local gote endgame. We apply it to the problems. (The traditional definition omits the division by 2.)

For the move value, we divide by 2 because it is a value per excess move. Black starting plays 1 excess move. White starting also plays 1 excess move. Both starts considered together amount to 2 excess moves.
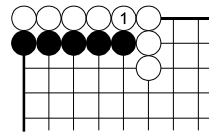
The move value assesses both Black's start and White's start in a local endgame position. Either starting player might make a single move or start an alternating sequence worth playing successively.
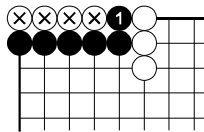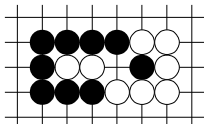
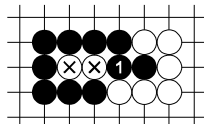| *Example 1:* | *Black's start:* | *White's start:* |
| Move value = **4** | Count = **8** | Count = **0** |

Example 1: Black's follow-up position has the count 8 because each marked occupied intersection is worth two points. White's follow-up position has the count 0. The initial position's move value is half the difference of the count 8 of Black's follow-up position and the count 0 of White's follow-up position:
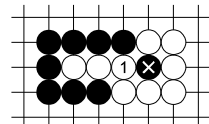
$$(8 - 0) / 2 = 8/2 = 4.$$

| *Example 2:* | *Black's start:* | *White's start:* |
| Move value = **3** | Count = **4** | Count = **-2** |

Example 2: Black's follow-up position has the count 4 because each marked occupied intersection is worth two points. White's follow-up position has the count -2 because Black has 0 points and we subtract White's 2 points for the one marked occupied intersection. The initial position's move value is half the difference of the count 4 of Black's follow-up position and the count -2 of White's follow-up position:

$$(4 - (-2)) / 2 = (4 + 2) / 2 = 6/2 = 3.$$

Count of an Unsettled Position

►In an unsettled local gote endgame, the *count* is the average of the count of Black's follow-up position and the count of White's follow-up position.

In a local gote endgame, the count is calculated as follows. First, calculate the count of the follow-up position after Black's start plus the count of the follow-up position after White's start. Second, divide by 2. Therefore, the initial count is the average of both. We divide by 2 since we form the average of two numbers.

The count is the position's positional value describing the expected result. In a local gote endgame, we do not know whether Black or White will start local play. We can, however, assume that either player's start has the probability 50%, which equals 1/2. Therefore, we divide the count of Black's follow-up position by 2 and divide the count of White's follow-up position by 2 to get the average.
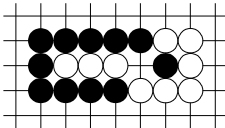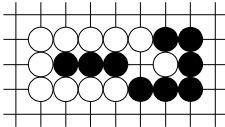

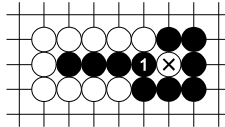*Example 1:*
Count = **2**
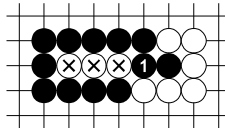
Black's start:
Count = **6**
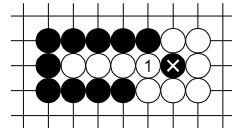
White's start:
Count = **-2**

Example 1: Black's follow-up position has the count 6 because each marked occupied intersection is worth two points. White's follow-up position has the count -2 because Black has 0 points and we subtract White's 2 points for the one marked occupied intersection. The initial position's count is the average of the count 6 of Black's follow-up position and the count -2 of White's follow-up position:
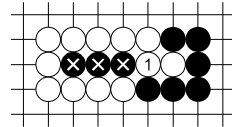
$$(6 + (-2)) / 2 = (6 - 2) / 2 = 4/2 = 2.$$

Example 2:
Count = **-2**

Black's start:
Count = **2**

White's start:
Count = **-6**

Example 2: Black's follow-up position has the count 2 because the one occupied intersection is worth 2 points. White's follow-up position has the count -6 because Black has 0 points and we subtract White's 6 points for the three marked occupied intersections. The initial position's count is the average of the count 2 of Black's follow-up position and the count -6 of White's follow-up position:

$$(2 + (-6)) / 2 = (2 - 6) / 2 = -4/2 = -2.$$

The negative count -2 favours White. As it should be, this is the negation of the count 2 of the colour-reversed *Example 1*.

►The following applies to each local endgame. First, imagine the moves and variations. Calculate the counts of resulting settled positions before deriving the values of earlier positions.

►In a simple gote without follow-up, Black's move creates a settled position or White's move creates another settled position. From the counts of both settled positions, we derive the values of the initial position.
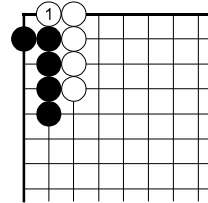
Answer 1
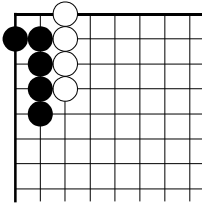
Dia. 1: Initial position:
Move value = **1/2**
Count = **1/2**
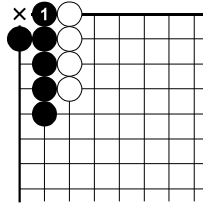
Dia. 2: Black starts:
Count = **1**

Dia. 3: White starts:
Count = **0**

Dia. 2: Black has 1 point (one empty intersection) so the count is 1. - *Dia. 3:* There is no local territory so the count is 0.

►We calculate the move value from Black's value perspective.

Move value: The initial position's *move value* is half the difference of the count 1 of the position created by Black's move and the count 0 of the position created by White's move:

$$(1 - 0) / 2 = 1/2.$$

►If we are only interested in the initial position's move value, we need not determine its count. The interpretation is also optional. This applies to the answers of all problems. For local endgames with basic shapes, however, it is good to know the count because we frequently apply it to follow-up positions of advanced shapes.
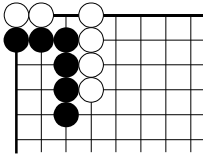
Count: The initial position's *count* is the average of the count 1 of the position created by Black's move and the count 0 of the position created by White's move:

$$(1 + 0) / 2 = 1/2.$$

Interpretation: Starting from the initial position with the count 1/2, Black's move gains 1/2 to create Black's follow-up position with the count 1. Starting from the initial position with the count 1/2, White's move lets Black lose 1/2 to create White's follow-up position with the count 0.

►In all answers, we only assess territory of the local endgame. The 'initial position' refers to the local endgame's initial position.
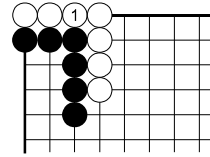
11

Answer 4

Dia. 1: Initial position: Move value = **2**, count = **2**
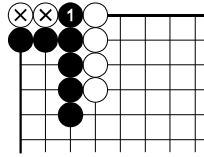
Dia. 2: Black starts: Count = **4**
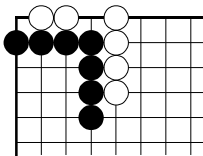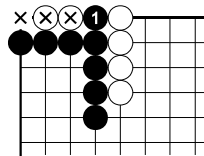

Dia. 3: White starts: Count = **0**

Dia. 2: Black has 4 points (two occupied intersections) so the count is 4. - *Dia. 3:* There is no local territory so the count is 0.

Move value: The initial position's *move value* is half the difference of the count 4 of the position created by Black's move and the count 0 of the position created by White's move: (4 - 0) / 2 = 2.

►A simple gote without follow-up and the count 0 of either resulting position allows the following shortcut: the number (here: 2) of captured stones in the other resulting position is the move value.

Count: The initial position's *count* is the average of the count 4 of the position created by Black's move and the count 0 of the position created by White's move: (4 + 0) / 2 = 2.
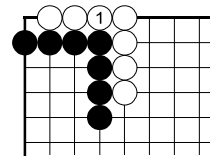
Answer 5

Dia. 1: Initial position: Move value = **2 1/2**, count = **2 1/2**

Dia. 2: Black starts: Count = **5**

Dia. 3: White starts: Count = **0**

Dia. 2: Black has 4 points (two occupied intersections) and 1 point (one empty intersection) so the count is 5. - *Dia. 3:* There is no local territory so the count is 0.

Move value: The initial position's *move value* is half the difference of the count 5 of the position created by Black's move and the count 0 of the position created by White's move:

$$(5 - 0) / 2 = 2\ 1/2.$$

►The shortcut needs a refinement: to the number 2 of captured stones, we add 1/2 for the empty territory intersection. Hence, the move value is 2 1/2.

Count: The initial position's *count* is the average of the count 5 of the position created by Black's move and the count 0 of the position created by White's move: (5 + 0) / 2 = 2 1/2.

Shortcut I for a Simple Gote

There is a shortcut for a simple gote. The simple gote must have these character-istics: it is without follow-up; one resulting position has the count 0; its stones do not surround any intersections; it is open on exactly one empty intersection. Since either player's stone fills this empty intersection, it contributes nothing.

- Each *stone* of the simple gote contributes 1 point.
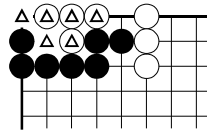- Each other *empty intersection* of the simple gote contributes 1/2 point.

►Calculate the sum of these points. The sum is the move value. For Black's re-gion, the sum is the count. For White's region, the negated sum is the count.
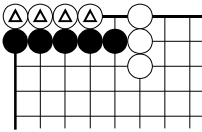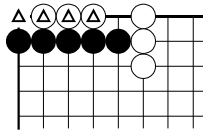
Example 1:	Example 2:	Example 3:
Move value = **4**	Move value = **3 1/2**	Move value = **5**
Count = **4**	Count = **3 1/2**	Count = **5**

Examples 1 - 3: Black's region has a positive count.

Example 1: The four marked stones contribute 4 points so the move value is 4 and the count is 4. - *Example 2:* The three marked stones contribute 3 points and the one marked empty intersection contributes 1/2 point. The sum is 3 1/2. Therefore, the move value is 3 1/2 and the count is 3 1/2.
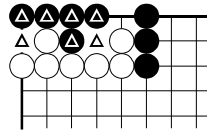
Example 3: The four marked stones contribute 4 points and the two marked empty intersections contribute 2 * 1/2 = 1 point. The sum is 4 + 1 = 5. There-fore, the move value is 5 and the count is 5.
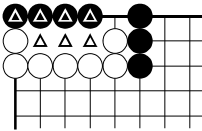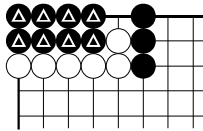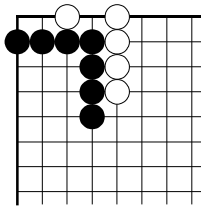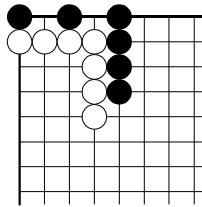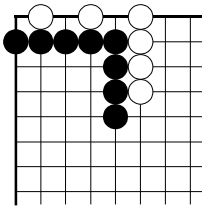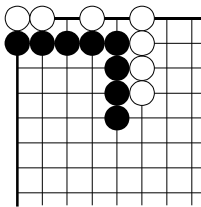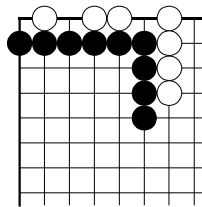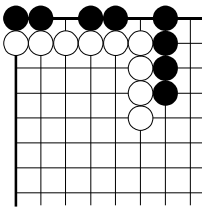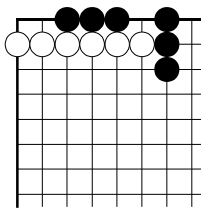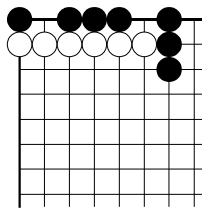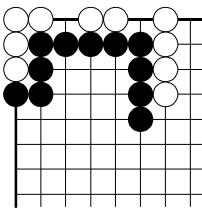
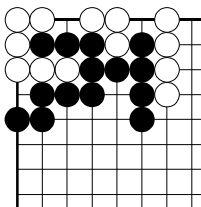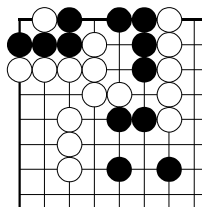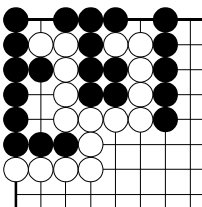| Example 4:	Example 5:	Example 6:
Move value = **5 1/2**	Move value = **8**	Move value = **6**
Count = **-5 1/2**	Count = **-8**	Count = **-6**

Examples 4 - 6: White's region has a negative count.

Example 4: The four marked stones contribute 4 points and the three marked empty intersections contribute 3 * 1/2 = 1 1/2 points. The sum is 4 + 1 1/2 = 5 1/2. Therefore, the move value is 5 1/2 and the count is -5 1/2.

Example 5: The eight marked stones contribute 8 points so the move value is 8 and the count is -8. - *Example 6:* The five marked stones contribute 5 points and the two marked empty intersections contribute 2 * 1/2 = 1 point. The sum is 5 + 1 = 6. Therefore, the move value is 6 and the count is -6.

4 One Follow-up

Problem 37	*Problem 38*	*Problem 39*
Problem 40	*Problem 41*	*Problem 42*
Problem 43	*Problem 44*	*Problem 45*
Problem 46	*Problem 47*	*Problem 48*

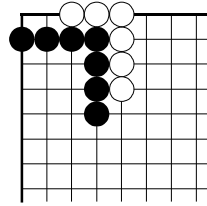►Evaluate the follow-up before the initial position!

Answer 37

Follow-up

For every local endgame with a follow-up, we evaluate the follow-up before the initial position.
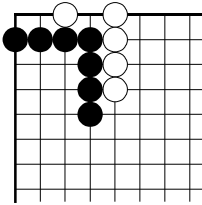
Dia. 1: Follow-up: Move value = **1/2**, count = **1/2**.

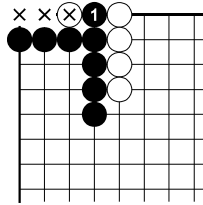From *Answer 1,* we know the follow-up move value 1/2 and count 1/2.
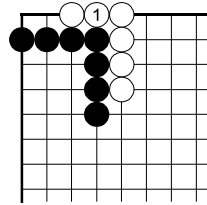
Dia. 1: Follow-up

Initial Position

Dia. 2: Initial position:
Move value = **1 3/4**
Count = **2 1/4**

Dia. 3: Black starts:
Count = **4**

Dia. 4: White starts

Dia. 3: Black has 2 points (one occupied intersection) and 2 points (two empty intersections) so the count is 4. - *Dia. 4:* White 1 creates the unsettled follow-up position in *Dia. 1.*

Move value: In *Dia. 2,* the initial position's *move value* is half the difference of the count 4 of the position in *Dia. 3* created by Black's move and the count 1/2 of the follow-up position in *Dia. 1* created by White's move:

$$(4 - 1/2) / 2 = 1 \ 3/4.$$

Count: The initial position's *count* is the average of the count 4 of the position created by Black's move and the count 1/2 of the follow-up position created by White's move:

$$(4 + 1/2) / 2 = 2 \ 1/4.$$

*Verification:* The initial position's local endgame is a local gote as the move value 1 3/4 is larger than the follow-up move value 1/2, that is, 1 3/4 > 1/2.

►By verifying the type 'local gote' of the local endgame, we confirm that it has been correct to calculate the move value and count as gote values.

Interpretation: Starting from the initial position with the count 2 1/4, Black's move gains 1 3/4 to create Black's follow-up position with the count 4. Starting from the initial position with the count 2 1/4, White's move lets Black lose 1 3/4 to create White's follow-up position with the count 1/2.
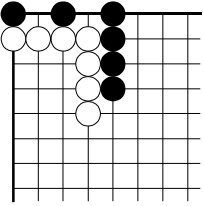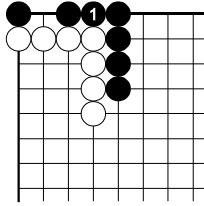
Answer 38

Follow-up
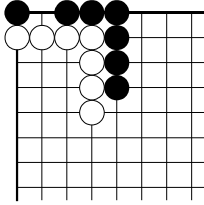
Dia. 1: From the colour-reversed *Answer 2,* we know the follow-up move value 1 and count -1.

Dia. 1: Follow-up:
Move value = **1**
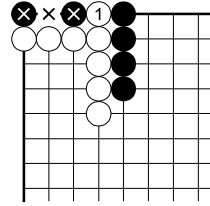Count = **-1**

Initial Position

Dia. 2: Initial position:
Move value = **2**
Count = **-3**

Dia. 3: Black starts

Dia. 4: White starts:
Count = **-5**

Dia. 3: Black 1 creates the follow-up position in *Dia. 1*. - *Dia. 4:* Black has 0 points. We subtract White's 4 points (two occupied intersections) and 1 point (one empty intersection) so the count is -5.

Move value: In *Dia. 2,* the initial position's *move value* is half the difference of the count -1 of the follow-up position in *Dia. 1* created by Black's move and the count -5 of the position in *Dia. 4* created by White's move:

$$(-1 - (-5)) / 2 = 2.$$

Count: The initial position's *count* is the average of the count -1 of the follow-up position created by Black's move and the count -5 of the position created by White's move:

$$(-1 + (-5)) / 2 = -3.$$

Verification: The initial position's local endgame is a local gote because the move value 2 is larger than the follow-up move value 1, that is, 2 > 1.

Interpretation: Starting from the initial position with the count -3, Black's move gains 2 to create Black's follow-up position with the count -1. Starting from the initial position with the count -3, White's move lets Black lose 2 to create White's follow-up position with the count -5.

Answer 72

Follow-up
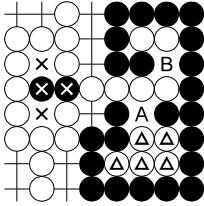
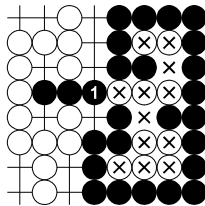*Dia. 1:* Follow-up:
Move value = **5**
Count = **1**

Dia. 1: The crosses denote the settled region of White's territory, whose move value is 0 and count is -6 (two occupied and two empty intersections). By counting the five stones marked with triangles, we apply shortcut I to region A: its move value is 5 and its count is 5. According to *Answer 4,* B has the move value 2 and count 2. The *follow-up move value* is the maximum 5 of the individual move values. The follow-up position's *count* is the sum of the individual counts: -6 + 5 + 2 = 1.

►This follow-up position exemplifies why using Black's value perspective and representing White's points by *negative numbers* is the always correct and safe method. Although White creates the follow-up position, its count is positive. Nevertheless, we may derive the initial position's values from it using our established calculations below. If we had used White's value perspective for the follow-up, we might derive wrong values of the initial position.
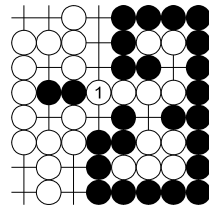
Initial Position
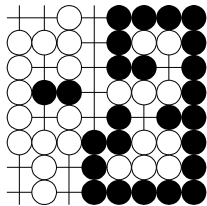
Dia. 2: Initial position:
Move value = **10 1/2**
Count = **11 1/2**

Dia. 3: Black starts:
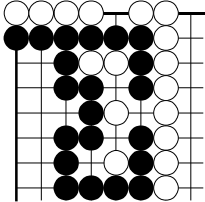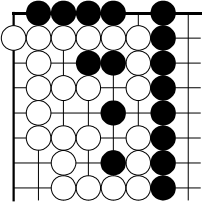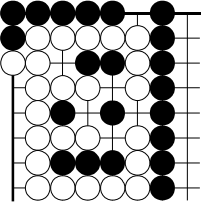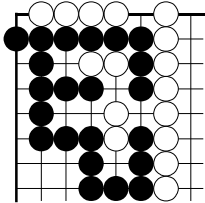Count = **22**

Dia. 4: White starts
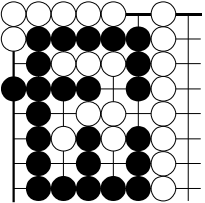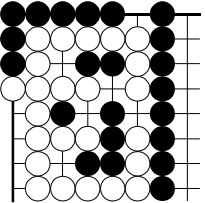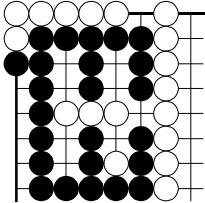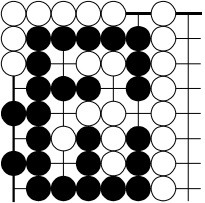
Dia. 3: Black has 20 points (ten occupied intersections) and 2 points (two empty intersections) so the count is 22. - *Dia. 4:* White 1 creates the follow-up position in *Dia. 1.*

Move value: In *Dia. 2,* the initial position's *move value* is half the difference of the count 22 of the position in *Dia. 3* created by Black's move and the count 1 of the follow-up position in *Dia. 1* created by White's move:
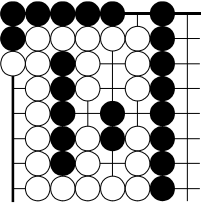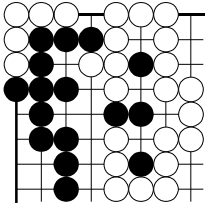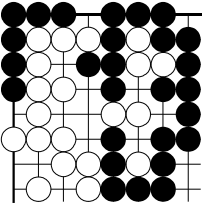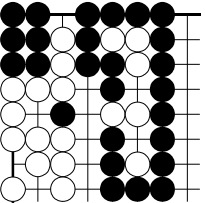
$$(22 - 1) / 2 = 10\ 1/2.$$

Count: The initial position's *count* is the average of the count 22 of the position created by Black's move and the count 1 of the follow-up position created by White's move so (22 + 1) / 2 = 11 1/2.

Verification: The initial position's local endgame is a local gote since the move value 10 1/2 is larger than the follow-up move value 5, that is, 10 1/2 > 5.

Problem 73

Problem 74

Problem 75

Problem 76

Problem 77

Problem 78

Problem 79

Problem 80

Problem 81

Problem 82

Problem 83

Problem 84

Problems 73 - 84: During the early endgame, determine the first move with the largest value!

Answer 89

Black's Follow-up

Dia. 1: The settled black territory region has the count 2 (two empty intersections). According to the colour-reversed *Answer 2,* region B has the move value 1 and count -1. Therefore, Black's follow-up position has *Black's follow-up move value* 1 and the *count* 2 + (-1) = 1.

Dia. 1: Black's follow-up: Move value = **1**, count = **1**

White's Follow-up

Dia. 2: The settled white territory region has the count -3. Due to *Answer 1,* region W has the move value 1/2 and count 1/2 so White's follow-up position has *White's follow-up move value* 1/2 and the *count* -3 + 1/2 = -2 1/2.
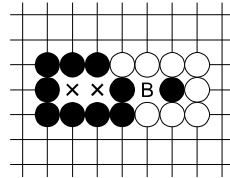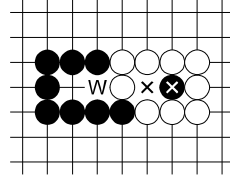
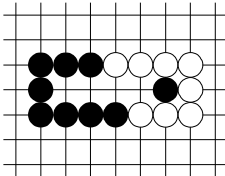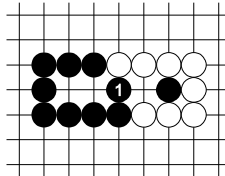*Dia. 2:* White's follow-up: Move value = **1/2**, count = **-2 1/2**
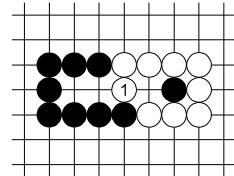
Initial Position

Dia. 3: Initial position: Move value = **1 3/4**, count = **-3/4**

Dia. 4: Black starts

Dia. 5: White starts

Move value: In *Dia. 3,* the initial position's *move value* is half the difference of the count 1 of Black's follow-up position in *Dia. 1* and the count -2 1/2 of White's follow-up position in *Dia. 2:*

$$(1 - (-2 \ 1/2)) / 2 = 1 \ 3/4.$$

Count: The initial position's *count* is the average of the count 1 of Black's follow-up position and the count -2 1/2 of White's follow-up position:

$$(1 + (-2 \ 1/2)) / 2 = -3/4.$$

Verification: The initial position's local endgame is a local gote since its move value 1 3/4 is larger than Black's follow-up move value 1 and larger than White's follow-up move value 1/2, that is, 1 3/4 > 1, 1/2.

Interpretation: Starting from the initial position with the count -3/4, Black 1 gains 1 3/4 to create Black's follow-up position in *Dia. 1* with the count 1. Starting from the initial position with the count -3/4, White 1 lets Black lose 1 3/4 to create White's follow-up position in *Dia. 2* with the count -2 1/2.

Answer 96

Black's Follow-up

Dia. 1: The settled black territory region marked with crosses has the count 3 (one occupied and one empty intersection). We use shortcut I to determine the values of the follow-up position's region marked with triangles. Since its four stones contribute 4 and its one empty intersection contributes 1/2, its move value is 4 1/2 and its count is -4 1/2, which is negative and favours White. Therefore, Black's follow-up position has *Black's follow-up move value* 4 1/2 and the *count* 3 + (-4 1/2) = -1 1/2.
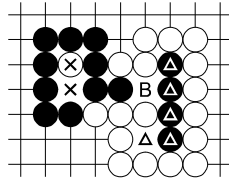
Dia. 1: Black's follow-up:
Move value = **4 1/2**
Count = **-1 1/2**

White's Follow-up

Dia. 2: The settled white territory region has the count -12 (five occupied and two empty intersections). According to *Answer 2,* region W has the move value 1 and count 1. Therefore, White's follow-up position has *White's follow-up move value* 1 and the *count* -12 + 1 = -11.
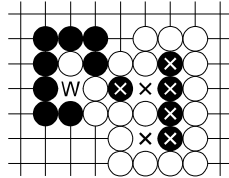
Dia. 2: White's follow-up:
Move value = **1**
Count = **-11**

Initial Position
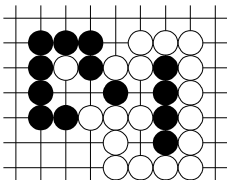
Dia. 3: Initial position: Move value = **4 3/4**, count = **-6 1/4**

Dia. 4: Black starts

Dia. 5: White starts

Move value: In *Dia. 3,* the initial position's *move value* is half the difference of the count -1 1/2 of Black's follow-up position in *Dia. 1* and the count -11 of White's follow-up position in *Dia. 2:*

$$(-1\ 1/2 - (-11)) / 2 = 4\ 3/4.$$

Count: The initial position's *count* is the average of the count -1 1/2 of Black's follow-up position and the count -11 of White's follow-up position:

$$(-1\ 1/2 + (-11)) / 2 = -6\ 1/4.$$

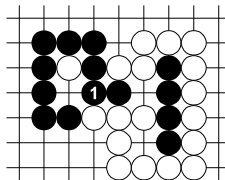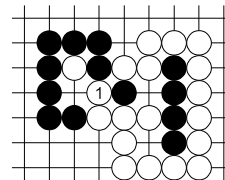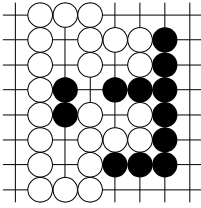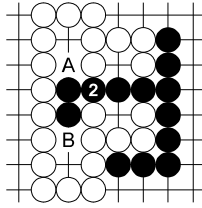*Verification:* The initial position's local endgame is a local gote since its move value 4 3/4 is larger than Black's follow-up move value 4 1/2 and larger than White's follow-up move value 1, that is, 4 3/4 > 4 1/2, 1.
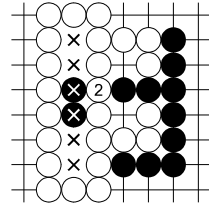
Answer 125

Black's Follow-up

Dia. 1: Black's follow-up:
Move value = **3 1/2**
Count = **-4 1/2**

Dia. 2: Black continues:
Next move value = **1/2**
Count = **-1**

Dia. 3: White continues:
Count = **-8**

Dia 3: The count is -8 (White has two occupied and four empty intersections).

Deep follow-ups: According to the colour-reversed *Answer 1,* each of the regions A and B in *Dia. 2* has the move value 1/2 and count -1/2. In the position created in *Dia. 2,* the next *move value* is the maximum 1/2 of both individual move values and the *count* is the sum -1/2 + (-1/2) = -1 of both regions' individual counts. This negative count favours White.
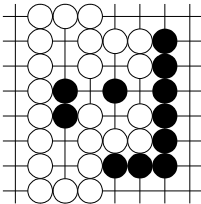
Move value: In Black's follow-up position in *Dia. 1,* the *follow-up move value* is half the difference of the count -1 of the position created by Black's continuation in *Dia. 2* and the count -8 of the position created by White's continuation in *Dia. 3:*

$$(-1 - (-8)) / 2 = 3\ 1/2.$$

Count: The *count* of Black's follow-up position is the average of the count -1 of the position created by Black's continuation and the count -8 of the position created by White's continuation so $(-1 + (-8)) / 2 = -4\ 1/2$.

Verification: Black's follow-up is a local gote as its move value 3 1/2 is larger than the deep follow-up position's move value 1/2 in *Dia. 2,* that is, 3 1/2 > 1/2.

Initial Position

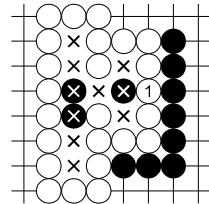

Dia. 4: Initial position: Move
value = **4 1/4**, count = **-8 3/4**
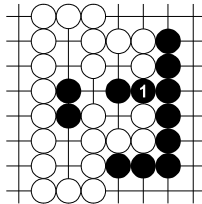
Dia. 5: Black starts

Dia. 6: White starts:
Count = **-13**

Dia. 6: The count is -13 (White has three occupied and seven empty intersections).

117

Move value: In *Dia. 4,* the initial position's *move value* is half the difference of the count -4 1/2 of Black's follow-up position in *Dia. 1* and the count -13 of White's follow-up position created in *Dia. 6:*

$$(-4 \ 1/2 - (-13)) / 2 = 4 \ 1/4.$$

Count: The initial position's *count* is the average of the count -4 1/2 of Black's follow-up position and the count -13 of White's follow-up position:

$$(-4 \ 1/2 + (-13)) / 2 = -8 \ 3/4.$$

Verification: The initial local endgame is a local gote as its move value 4 1/4 is larger than the follow-up move value 3 1/2 in *Dia. 1,* that is, 4 1/4 > 3 1/2.

Answer 126

White's Follow-up

Dia. 1: According to the colour-reversed *Answer 38,* region A has the move value 2 and the count 3. According to *Answer 2,* region B has the move value 1 and count 1. In White's follow-up position, the *follow-up move value* is the maximum 2 of both individual move values and the *count* is the sum 3 + 1 = 4 of both regions' individual counts.
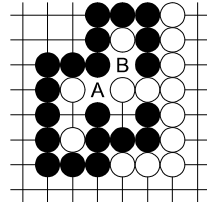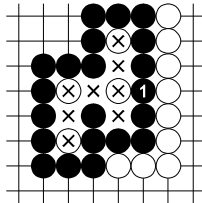

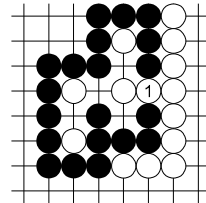*Dia. 1:* White's follow-up: Move value = **2**
Count = **4**

Initial Position
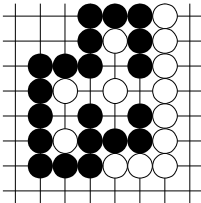
Dia. 2: Initial position: Move value = **4**, count = **8**

Dia. 3: Black starts: Count = **12**

Dia. 4: White starts

Dia. 3: The count is 12 (four occupied and four empty intersections).

Move value: In *Dia. 2,* the initial position's *move value* is half the difference of the count 12 of Black's follow-up position created in *Dia. 3* and the count 4 of White's follow-up position in *Dia. 1:*

$$(12 - 4) / 2 = 4.$$

Count: The initial position's *count* is the average of the count 12 of Black's follow-up position and the count 4 of White's follow-up position:

$$(12 + 4) / 2 = 8.$$

Verification: The initial local endgame is a local gote because its move value 4 is larger than the follow-up move value 2 in *Dia. 1,* that is, 4 > 2.