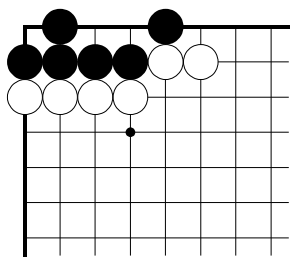
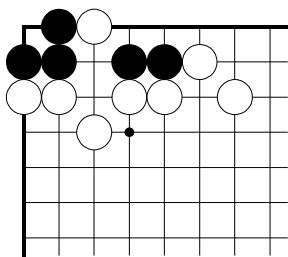


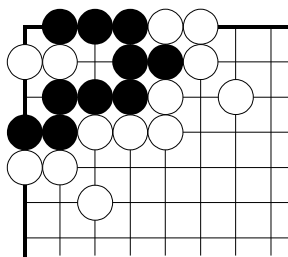
## Problems



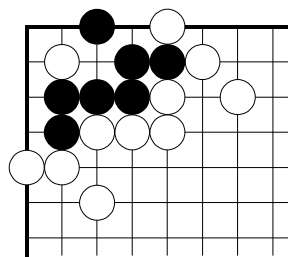
Problem 1:  
White to move



Problem 2:  
Black to move

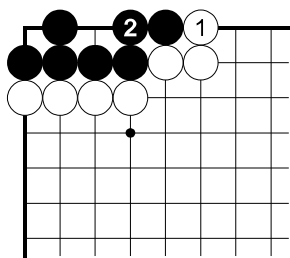


Problem 3: Why  
is Black dead?

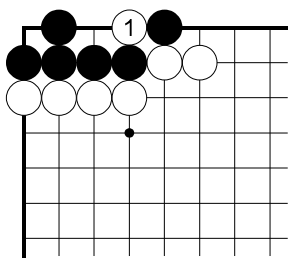


Problem 4:  
Black to move

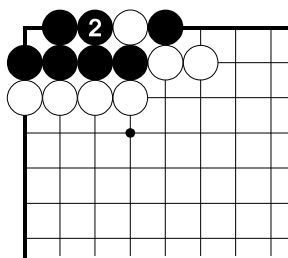
## Answers



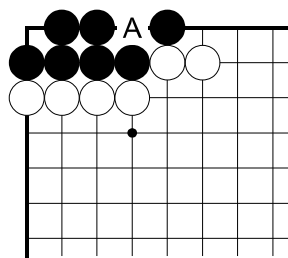
Answer 1:  
failure, alive



Dia. 1.1: correct



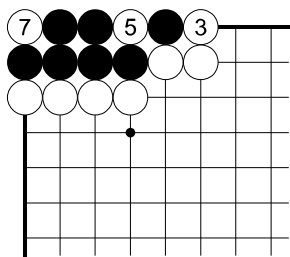
Dia. 1.2: futile



Dia. 1.3: dead

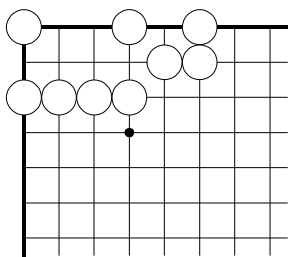
Dia. 1.2 + 1.4: During a game, the players would not play these moves, which prove the status of the black group after White 1 in Dia. 1.1.

Dia. 1.3: The black group is dead because A is no eye.

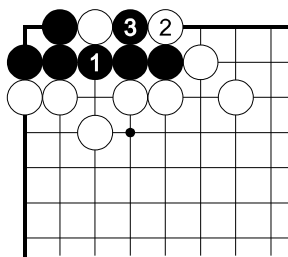


4 6 pass.

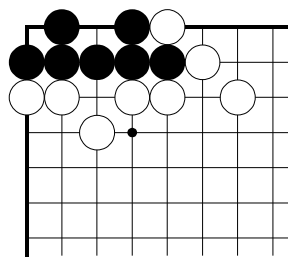
Dia. 1.4: removal



Dia. 1.5: result



Answer 2: correct

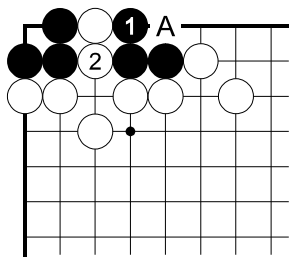


Dia. 2.1: two eyes

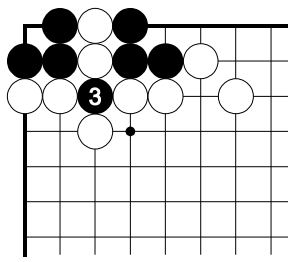
Dia. 1.4: In principle, White can remove the black group. This explains its death in Dia. 1.3.

Answer 2: At move 1, Black has a choice between the correct move 1 in Answer 2 and the wrong move 1 in Dia. 2.2. Black chooses the former because it results in the independent life of his group.

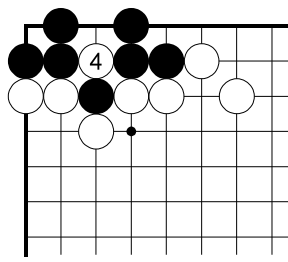
Dia. 2.2: Black 1 at A is refuted by White 2.



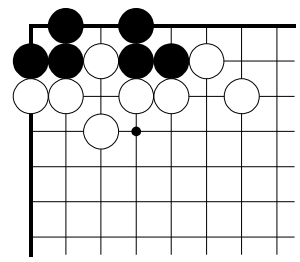
*Dia. 2.2:  
Black's mistake*



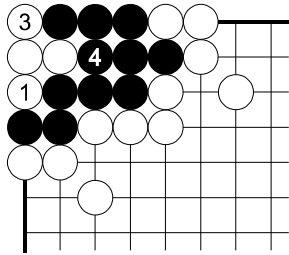
*Dia. 2.3:  
continuation*



*Dia. 2.4:  
continuation*

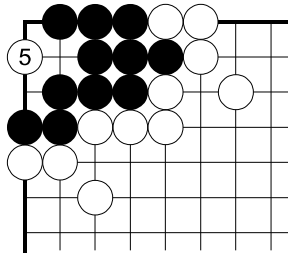


*Dia. 2.5: dead*



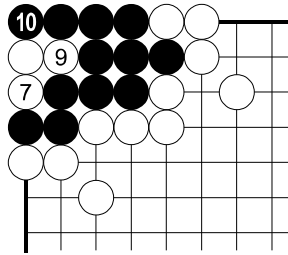
**2** pass.

*Answer 3:  
approach I*



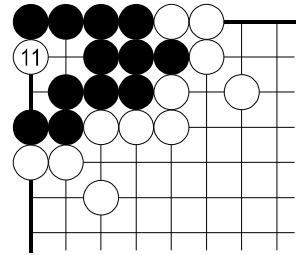
**6** pass.

*Dia. 3.1:  
approach II*



**8** pass.

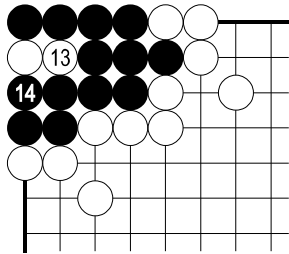
*Dia. 3.2:  
approach III*



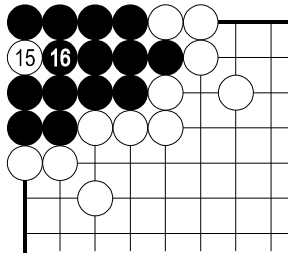
**12** pass.

*Dia. 3.3:  
approach IV*

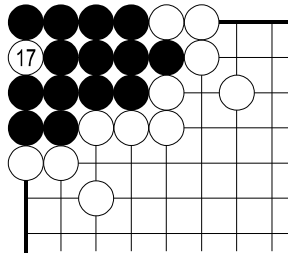
*Answer 3 - Dia. 3.7:* In *Problem 3*, the black group is dead because White can approach its liberties and eventually remove the black stones. White 5 and 11 must be played on the 'vital point' so that Black cannot partition the eyespace. White can vary most of his other moves but Black cannot prevent the permanent removal of his group. White would also remove any new black stones played in the upper left region in *Dia. 3.7*. During the sequence, Black passes to delay removal; he does not want to cooperate in filling the liberties of his own group.



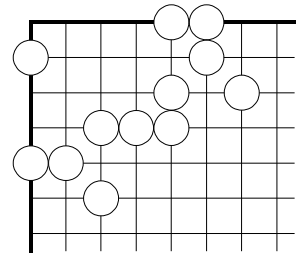
*Dia. 3.4:  
approach V*



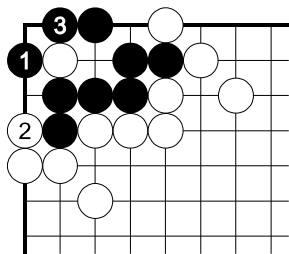
*Dia. 3.5:  
approach VI*



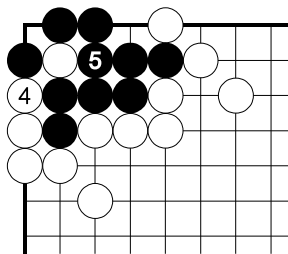
*Dia. 3.6:  
approach VII*



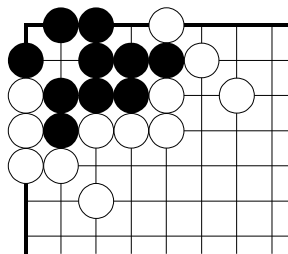
*Dia. 3.7: result*



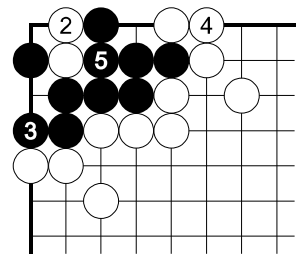
*Answer 4:  
correct I, alive*



*Dia. 4.1:  
continuation*

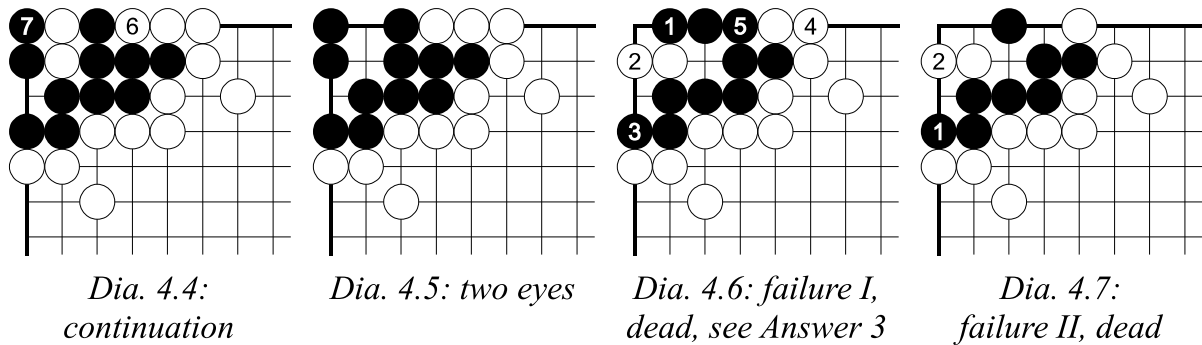


*Dia. 4.2: two eyes*

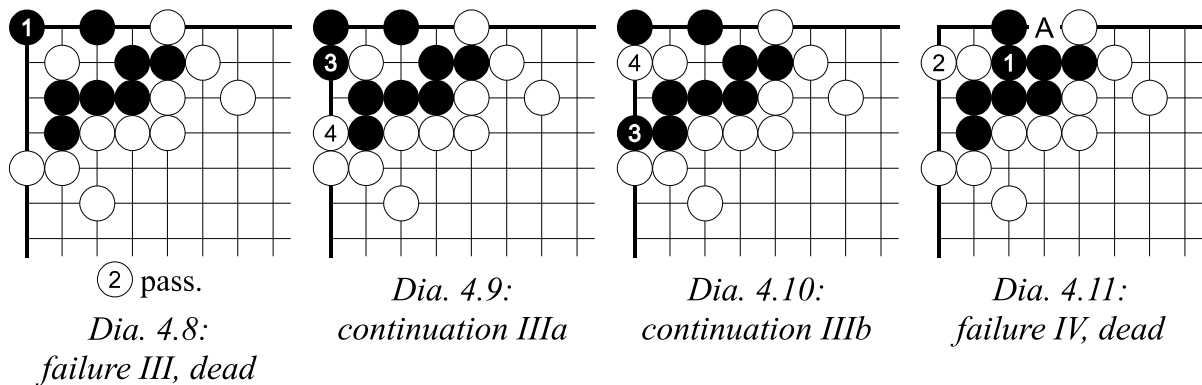


*Dia. 4.3:  
correct II, alive*

*Answer 4 - Dia. 4.5:* Black 1 in *Answer 4* is the only correct first move, which Black chooses. White can vary his reply 2 but the black group gets its two eyes. Since Black achieves independent life in each follow-up, we conclude that Black 1 guarantees two eyes for the black group.



*Dia. 4.6 - 4.11:* Black does not choose his first move as in these variations.



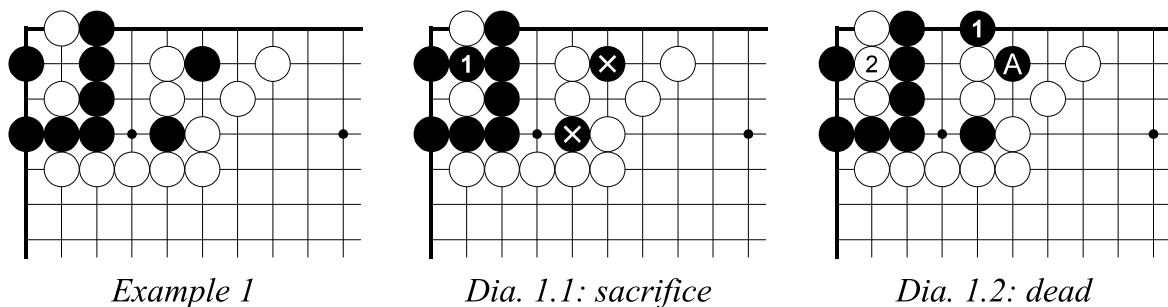
*Dia. 4.8 - 4.10:* Black 1 is so bad that White can reply with a pass and the black group is dead nevertheless. Black cannot build two eyes because White prevents a second eye (*Dia. 4.9*) or a partition of the eyespace (*Dia. 4.10*).

*Dia. 4.11:* Black 1 at A is also answered by White 2.

## 1.2 Sacrifice

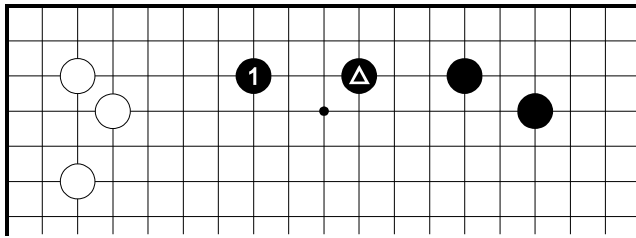
Trying to defend each stone is often disadvantageous. Sacrifices are necessary to enable efficient development of important strings.

**A few non-essential stones can be sacrificed if necessary.**



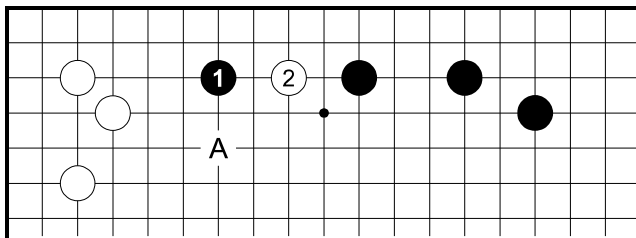
## 1.15 Strategy

Usually, defend the life of a group by maintaining the connection of its important strings.



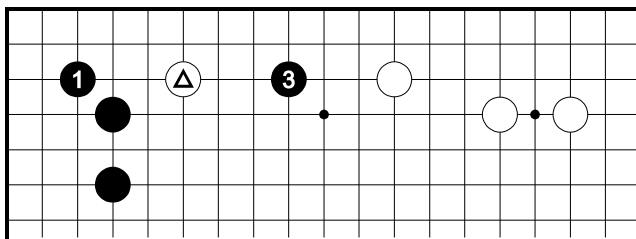
Example 1: maintained connection

Example 1: Black 1 is the correct extension along the upper side because the played stone is connected to the adjacent, marked stone. Connection guarantees life.



Dia. 1.1: Black's mistake

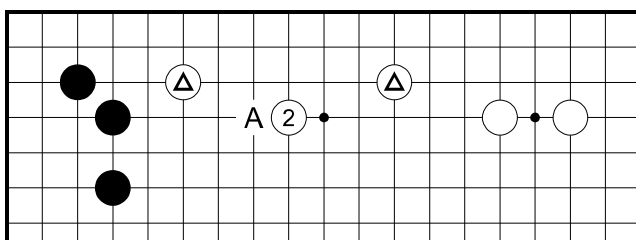
Dia. 1.1: The mistake 1 extends too far and approaches the strong white group too closely so that White 2 cuts and attacks. Black unnecessarily creates a weak group with A as its only development direction.



② elsewhere.

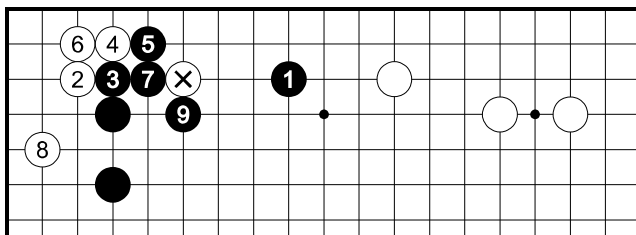
Example 2: White's mistake

Example 2: Before move 1, the marked stone had the equal options of developing it as in Dia. 2.1 or 2.2. After Black 1, White must avoid the mistake of playing elsewhere and failing to defend his important stone.



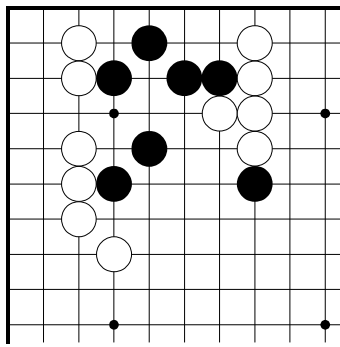
Dia. 2.1: maintained connection

Dia. 2.1: White must play at 2 or A to maintain the connection between the marked stones. Thereby he protects the life of the left stone.

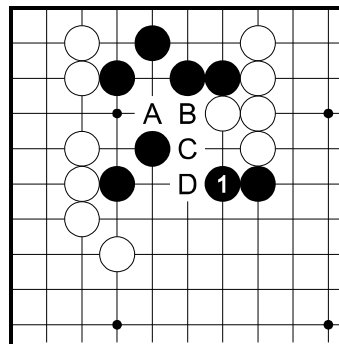


Dia. 2.2: corner life

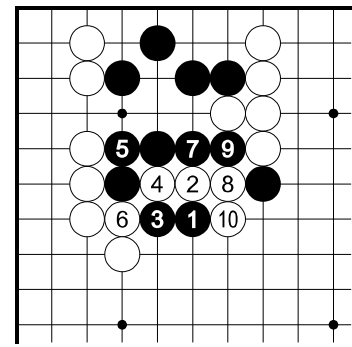
Dia. 2.2: It is White's second option to sacrifice the marked stone and live in the corner.



Example 3



Dia. 3.1: connection

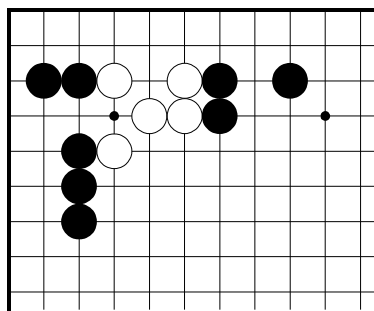


Dia. 3.2: cut

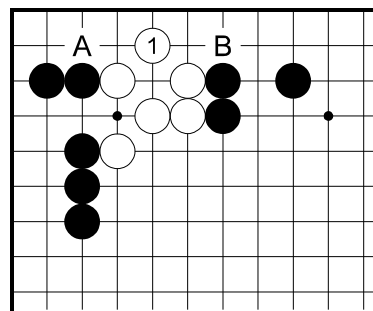
*Dia. 3.1:* In order to defend the life of the black group, Black must maintain the connection while moving the group to the center. Black 1 maintains the connection because White cannot cut by playing at A, B, C or D. The reader is invited to verify this by reading sequences arising from each of these moves.

*Dia. 3.2:* Black must not be careless. Move 1 is his mistake because White cuts and kills. Instead of move 3, Black 4 - White 3 also fails. Black 5 at 6 is refuted by White 5. Black 7 at 8 or 9 does not help Black, either.

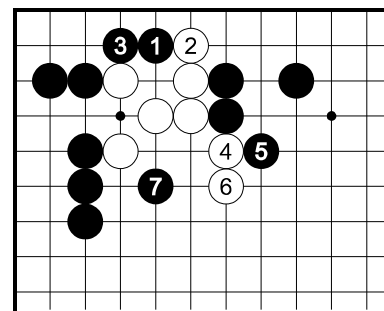
### Defend your weak important groups.



Example 4: weak group



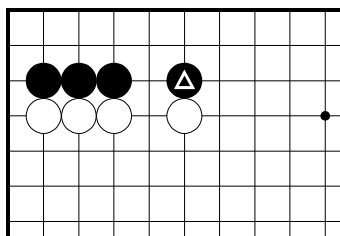
Dia. 4.1: defense



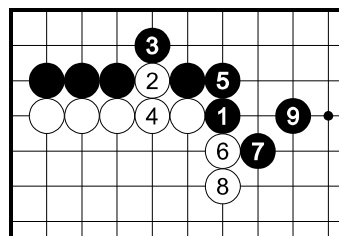
Dia. 4.2: attack

*Dia. 4.1:* White must defend his previously weak group. White 1 establishes its local life because White A or B can build the second eye.

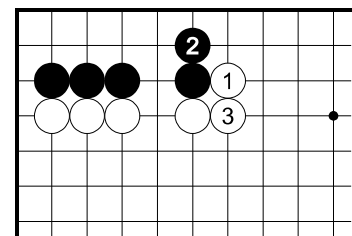
*Dia. 4.2:* If White neglects defense in time, Black attacks the group so that it does not have any eyes. Black can profit from attacking the very weak group.



Example 5: weak group



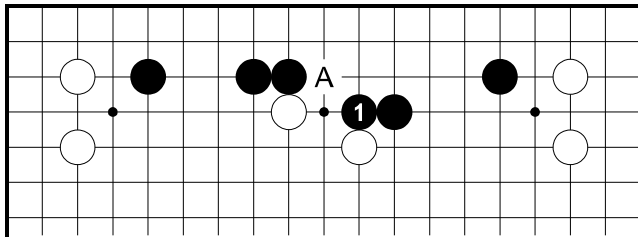
Dia. 5.1: good for Black



Dia. 5.2: good for White

*Example 5:* The black group is weak because the marked stone is unstable. Immediately, Black must defend it as in *Dia. 5.1* by creating strong shape and gain-

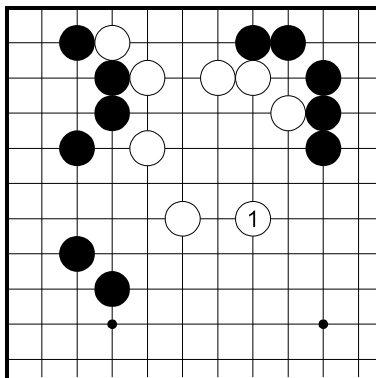
ing good access to the upper side and center. If White plays first (*Dia. 5.2*), he controls the center and upper side. The difference between the two diagrams is like day and night.



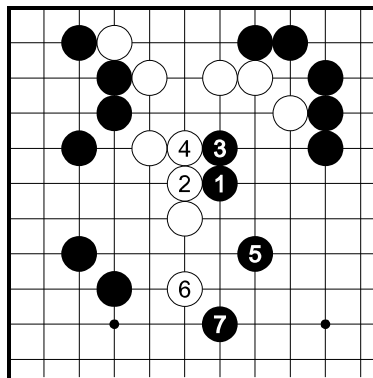
*Example 6: defending two weak groups*

*Example 6:* Before White cuts at A and launches a double attack on two weak black groups, Black defends by connecting them. The combined black group is strong.

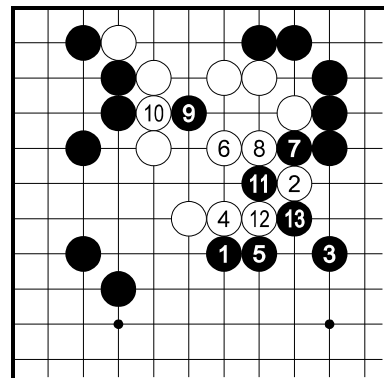
**Simplify by defending early and avoiding a complicated life and death problem.**



*Example 7: simple defense*

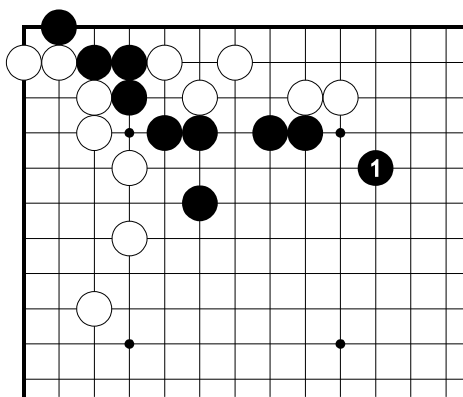


*Dia. 7.1: attack I*

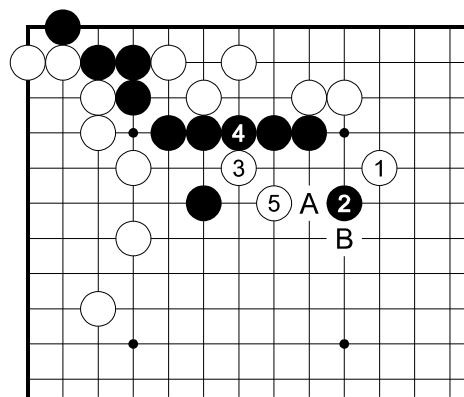


*Dia. 7.2: attack II*

*Example 7:* White should reinforce his weak group in time so that he does not need to correctly predict all possible complicated attacks, such as those in *Dia. 7.1 + 7.2*. White 1 simplifies defense, creates good development potential in the center and prevents Black from dominating the center with very strong shape.



*Example 8: simple defense*

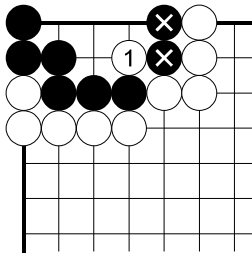


*Dia. 8.1: attack*

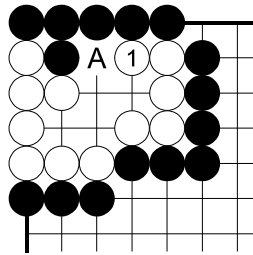
*Example 8:* Black must defend his important group before White can start a complicated fight (*Dia. 8.1*) and attack harshly. Instead of move 2, Black A is countered by White B.

## 2.3 Atari

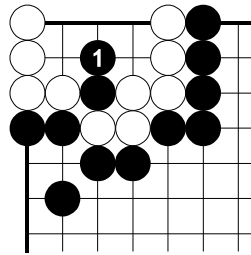
An **atari** threatens immediate removal by reducing an opposing string to one liberty. A player can give an atari, *threaten* (to give) *an atari* (removal by a player's another two successive moves), *escape from an atari* (transforming an atari on a string into the opponent's necessity to approach at least two liberties before removal of the string) or *prevent* the opponent from giving *an atari* (before the move, the opponent can put a string in atari and, after the move, he cannot do so).



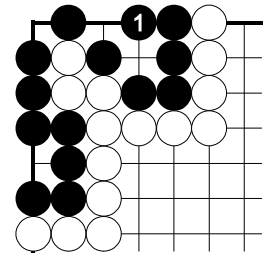
Example 1: atari



Example 2: threatening an atari



Example 3: escaping from an atari



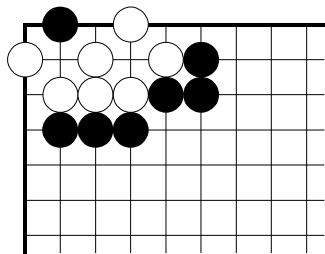
Example 4: preventing an atari

Example 1: White 1 puts the marked string in atari.

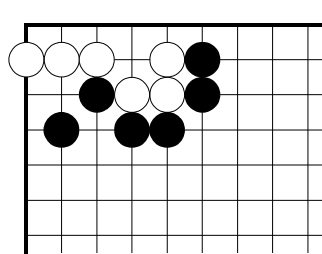
Example 2: White 1 threatens the atari A.

Example 4: Black 1 prevents the atari White 1.

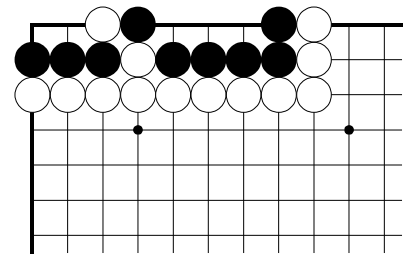
### Problems



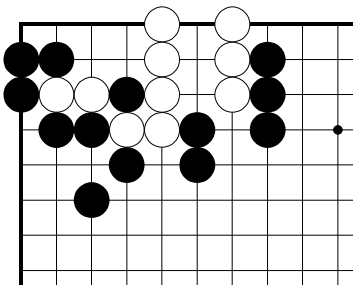
Problem 1: Black to move



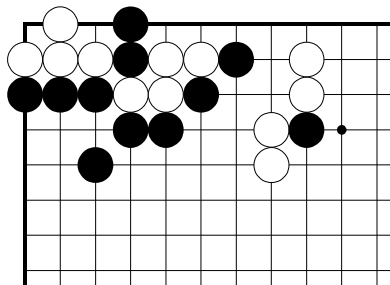
Problem 2: Black to move



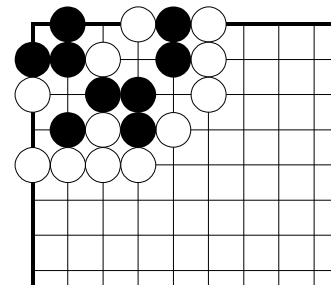
Problem 3: Black to move



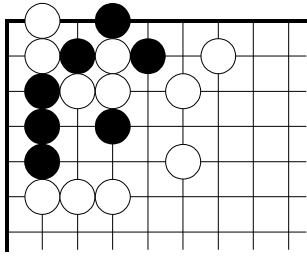
Problem 4: White to move



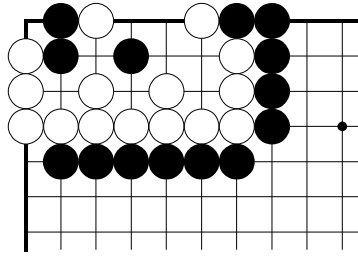
Problem 5: White to move



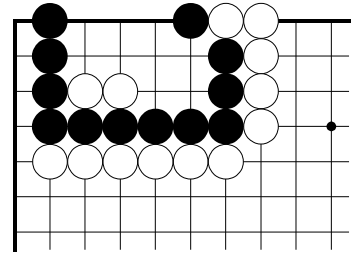
Problem 6



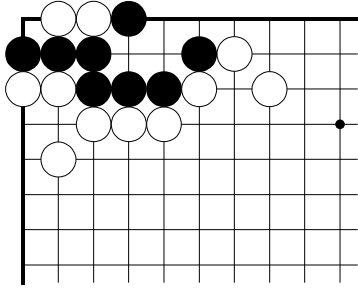
Problem 7: Black to move



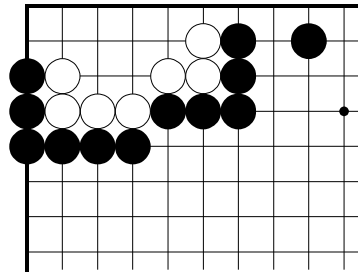
Problem 8: Black to move



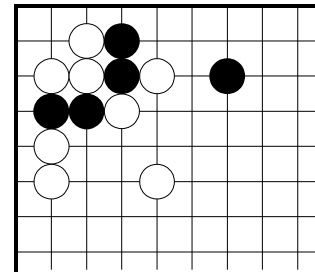
Problem 9: Black to move



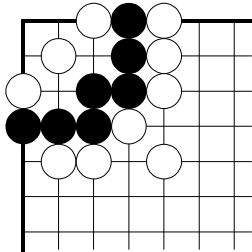
Problem 10: White to move



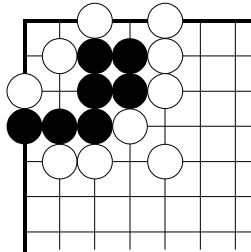
Problem 11: Black to move



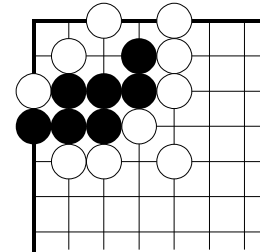
Problem 12: Black to move



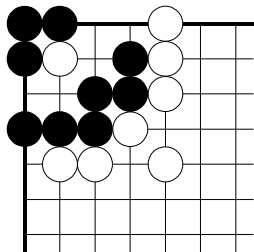
Problem 13: Black to move



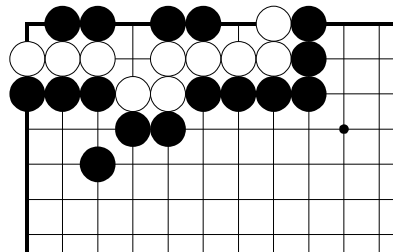
Problem 14: Black to move



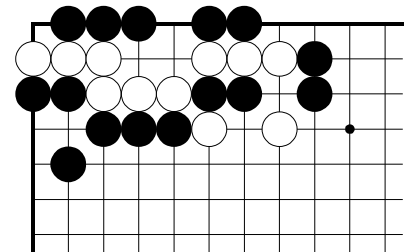
Problem 15: Black to move



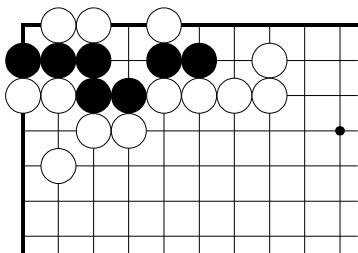
Problem 16:  
White to move



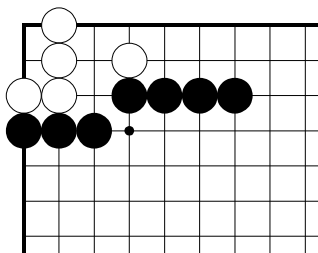
Problem 17: Black to move



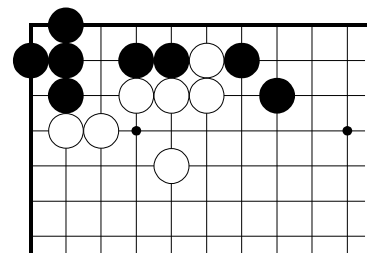
Problem 18: Black to move



Problem 19: White to move



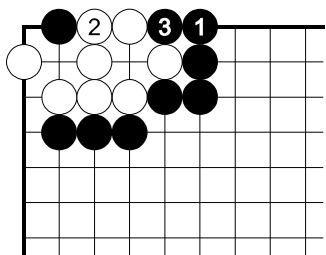
Problem 20: Black to move



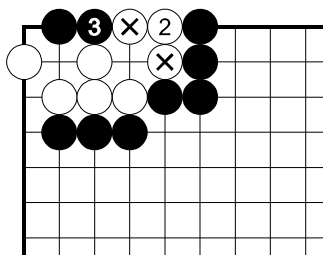
Problem 21: Can White kill?



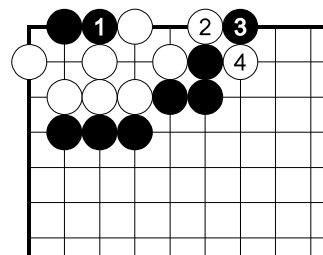
## Answers



*Answer 1: correct I, dead*

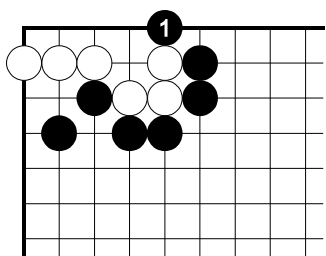


*Dia. 1.1: correct II, dead*

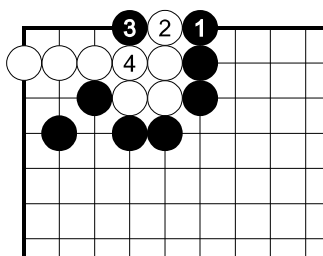


*Dia. 1.2: failure, ko*

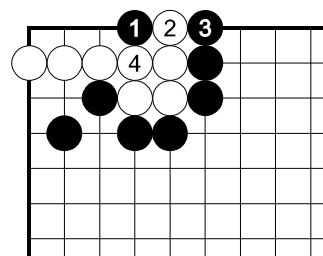
*Dia. 1.1:* The marked white string can only escape from atari if White fills its adjacent intersection, which was meant to be the second eye.



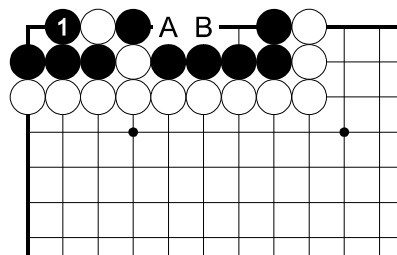
*Answer 2: correct, dead*



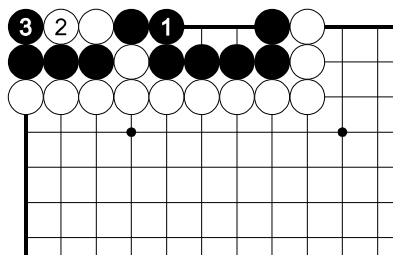
*Dia. 2.1: failure I, alive*



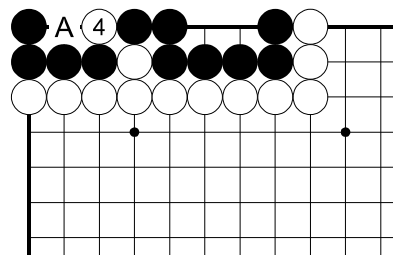
*Dia. 2.2: failure II, alive*



*Answer 3: correct, alive*



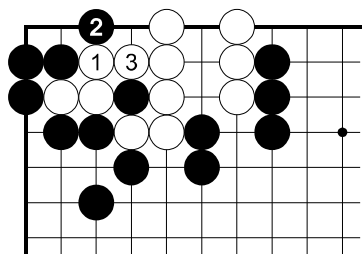
*Dia. 3.1: failure, dead*



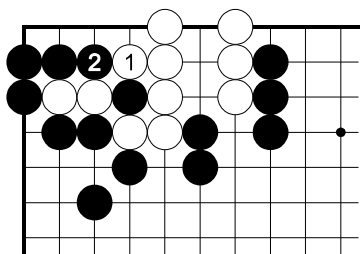
*Dia. 3.2: continuation*

*Answer 3:* Black 1 escapes from atari. Next, White A - B or White B - A cannot kill the black group.

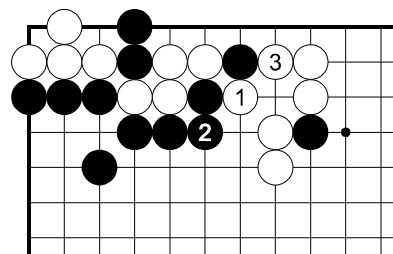
*Dia. 3.1 + 3.2:* Black 1 is another move that escapes from atari but this move fails. Black suffers from the snapback Black A - 4.



*Answer 4: correct, alive*

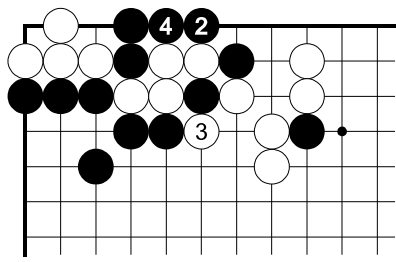


*Dia. 4.1: failure, dead*

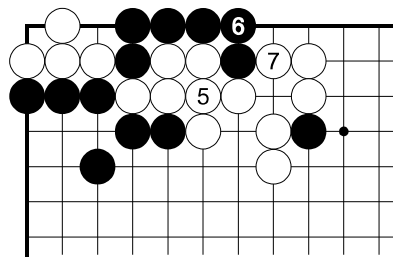


*Answer 5: correct I, alive*

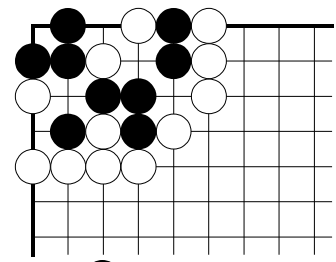
*Answer 6:* If Black starts during the middle game, he should play elsewhere because the core of his group lives. If White starts during the endgame, he can only remove the marked string in *Dia. 6.1*.



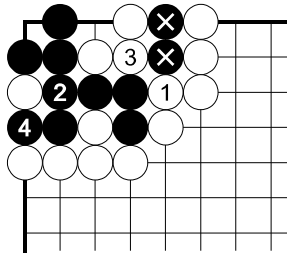
*Dia. 5.1: correct II,  
live white group*



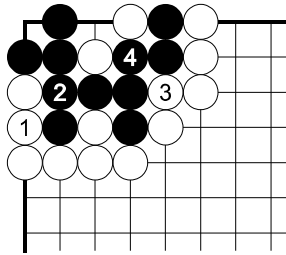
*Dia. 5.2: continuation*



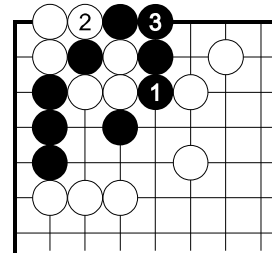
**1** elsewhere.  
*Answer 6: correct, alive*



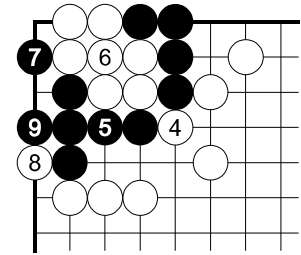
*Dia. 6.1: endgame*



*Dia. 6.2: failure*

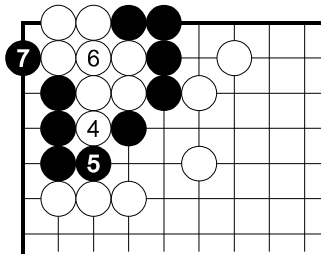


*Answer 7: correct,  
Black lives*

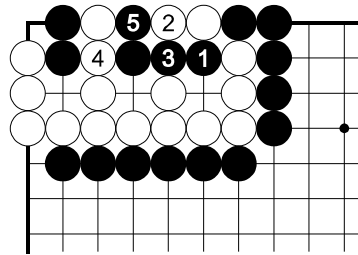


*Dia. 7.1:  
continuation I*

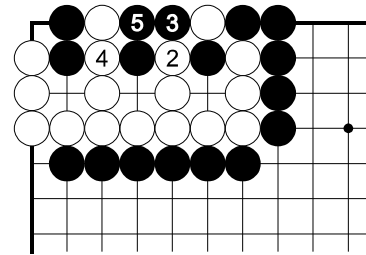
*Dia. 6.1:* Black 2 at 3 would be a self-atari. The marked string is caught in a liberty shortage.



*Dia. 7.2: continuation II*

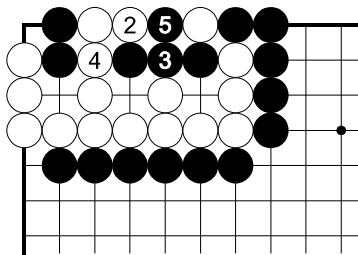


*Answer 8: correct I, dead*

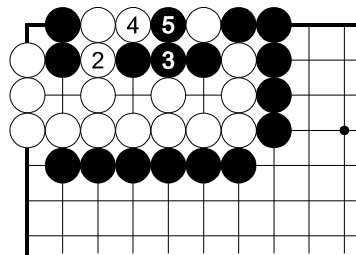


*Dia. 8.1: correct II, dead*

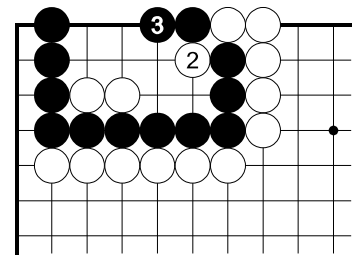
*Answer 8 - Dia. 8.3:* Black 1 kills the white group because each interesting reply 2 is White's failure. We must read every variation.



*Dia. 8.2: correct III, dead*

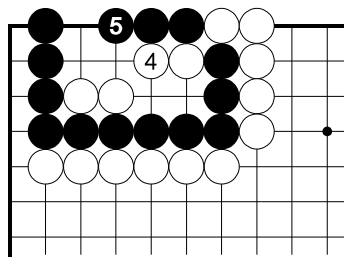


*Dia. 8.3: correct IV, dead*

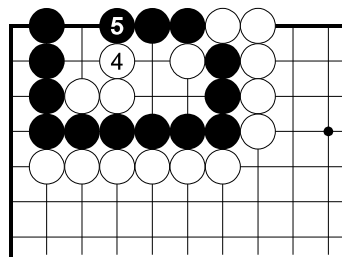


**1** elsewhere.  
*Answer 9: correct, alive*

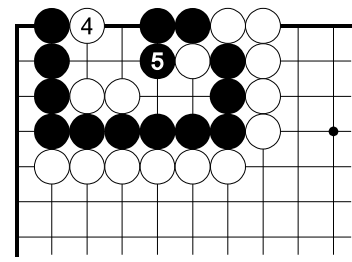
*Answer 9 - Dia. 9.5:* Black's play elsewhere is correct. After the obvious moves 2 and 3, we verify by reading each interesting move 4. Each of them fails for White so the play elsewhere, Black 1, succeeds for Black. Instead, if Black used his first move to reinforce his territory, this would be one point worse than passing because he would lose one territory intersection.



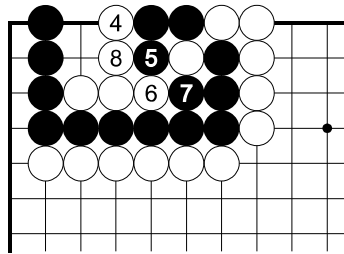
*Dia. 9.1: continuation I*



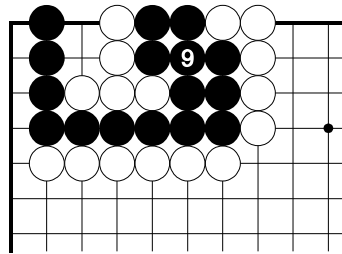
*Dia. 9.2: continuation II*



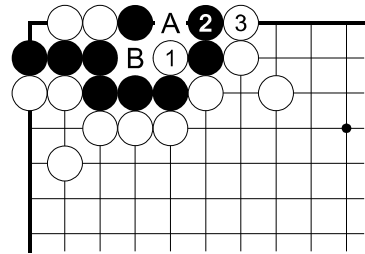
*Dia. 9.3: continuation III*



*Dia. 9.4: continuation IV*

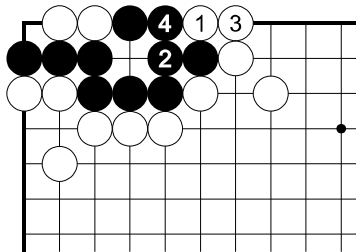


*Dia. 9.5: continuation*

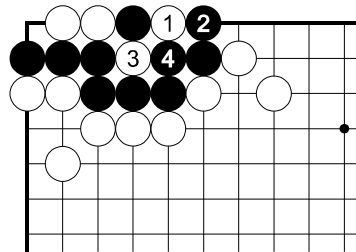


*Answer 10: correct, dead*

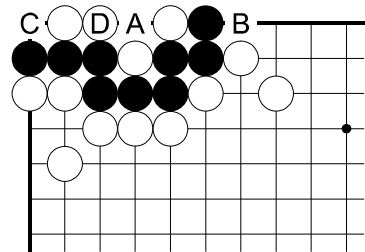
*Answer 10: Black A - B and Black B - A fail.*



*Dia. 10.1: failure I, alive*

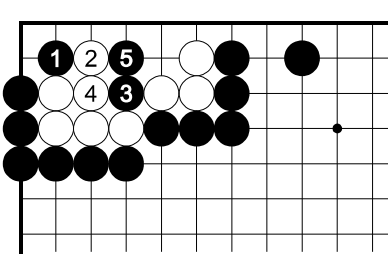


*Dia. 10.2: failure II, alive*

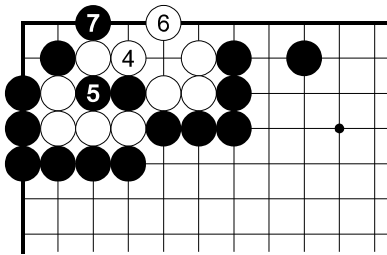


*Dia. 10.3: continuation*

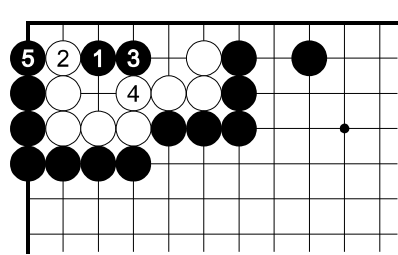
*Dia. 10.3: White cannot kill with any of the sequences White A - C - A - D, White A - C - D - A or White B - A.*



*Answer 11: correct I, dead*



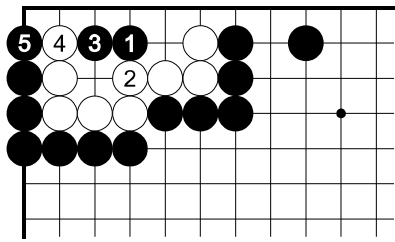
*Dia. 11.1: correct II, dead*



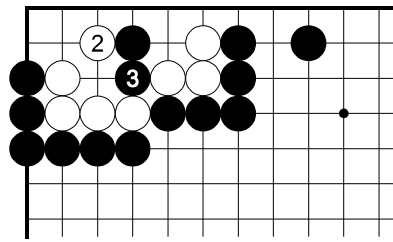
*Dia. 11.2: correct III, dead*

*Answer 11 - Dia. 11.4: Black 1 in Answer 11, Dia. 11.2 or 11.3 kills. It is sufficient to read either Answer 11 + Dia. 11.1 or Dia. 11.2 or Dia. 11.3 + 11.4. However, Dia. 11.2 or 11.3 require subsequent reading, for which the reader is invited to verify why White does not have any continuation preventing Black from killing unconditionally. Black 1 in Answer 11 is the simplest correct first move because it reduces the eyespace and so eases the subsequent reading.*

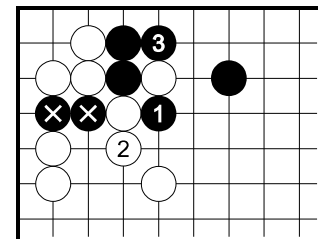
*Answer 12: As the study of all variations reveals, Black cannot rescue the marked string or capture the white string in the corner. Therefore, he can only reduce and build eye shape for his upper group. Dia. 12.4 is worse for him.*



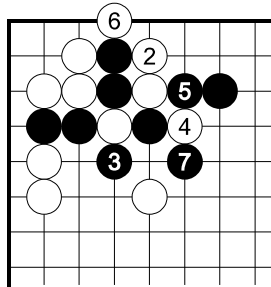
*Dia. 11.3: correct IV, dead*



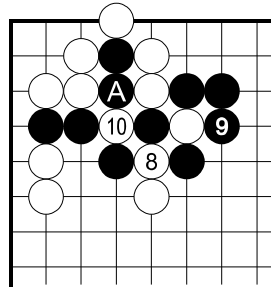
*Dia. 11.4: correct V, dead*



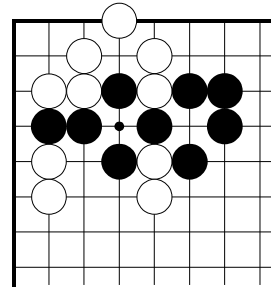
*Answer 12: correct*



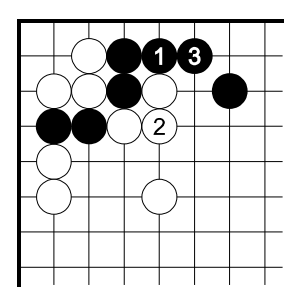
*Dia. 12.1:  
White's mistake*



**11** at A.  
*Dia. 12.2:  
continuation*



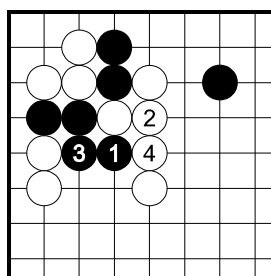
*Dia. 12.3: result*



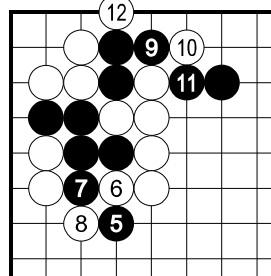
*Dia. 12.4:  
Black's mistake I*

*Dia. 12.1:* White 6 at 7 is refuted easily by Black 6.

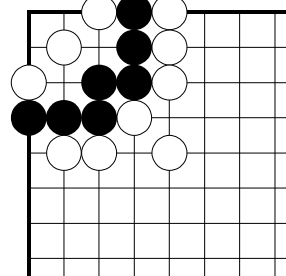
*Dia. 12.1 - 12.3:* White 2 in *Dia. 12.1* helps Black.



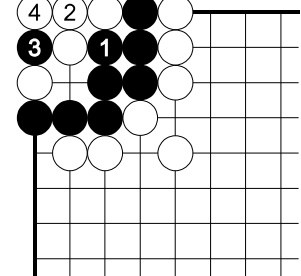
*Dia. 12.5:  
Black's mistake II*



*Dia. 12.6:  
continuation*

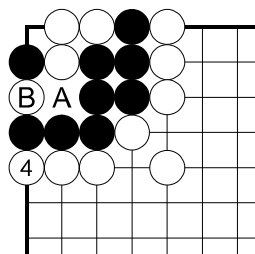


**1** elsewhere.  
*Answer 13:  
correct, dead*

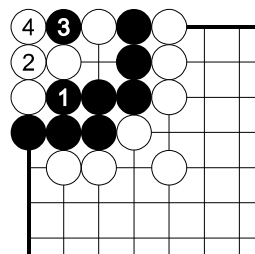


*Dia. 13.1: futile I*

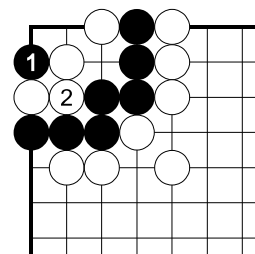
*Answer 13 - Dia. 13.5:* Black should play elsewhere because his group is dead. He does not have any local reviving play. We must, however, read every variation to confirm this.



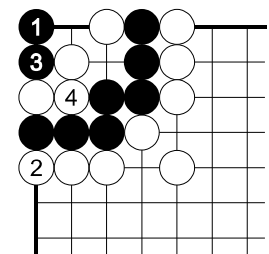
*Dia. 13.2: futile II*



*Dia. 13.3: futile III*



*Dia. 13.4: futile IV*



*Dia. 13.5: futile V*

*Dia. 13.2:* Black A - White B is a snapback.