

# Go

*The most challenging  
board game in the world*

**An introduction to this ancient and fascinating game**

**The British Go Association © 1999**



TOYO KUNI III (1786 – 1867) – ACTORS PLAYING GO

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A TRADITIONAL JAPANESE GO BAN WITH STONES MADE FROM CLAM SHELL AND SLATE

by kind permission of Ishi Press

# *Introduction to the game of Go*

## **Go is unique among games**

The history of Go stretches back some 3000 years and the rules have remained essentially unchanged throughout this very long period. The game probably originated in China or the Himalayas and mythology has it that the future of Tibet was once decided over a Go board when the Buddhist ruler refused to go into battle; instead he challenged the aggressor to a game of Go to avoid bloodshed.

In the Far East, where it originated, Go enjoys great popularity today and interest in the game is growing steadily in Europe and America. Like Chess, Go is a game of skill – it's been described as being like four Chess games going on together on the same board – but it differs from Chess in many ways. The rules of Go are very simple and though, like Chess, it is a challenge to players' analytical skills, there is far more scope in Go for intuition.

Go is a territorial game. The board, marked with a grid of 19 lines by 19 lines, may be thought of as a piece of land to be shared between the two players. One player has a supply of black pieces, called stones, the other a supply of white. The game starts with an empty board and the players take turns, placing one stone at each turn on a vacant point. Black plays first and the stones are placed on the intersections of the lines rather than in the squares. Once played, stones

are not moved although they may be surrounded and so captured, in which case they are removed from the board as prisoners.

The players normally start by staking out their respective claims to different parts of the board which they intend eventually to surround and thereby make into territory. However, fights between enemy groups provide much of the excitement in a game and can result in dramatic exchanges of territory. At the end of the game the players count one point for each vacant intersection inside their own territory and one point for every stone they have captured. The one with the larger total is the winner.

Capturing stones is certainly one way of gaining territory but one of the subtleties of Go is that aggression doesn't always pay. The strategic and tactical possibilities of the game are endless, providing a challenge and enjoyment to players at every level and the personalities of the players emerge very clearly on the Go board. The game reflects the skills of the players in balancing attack and defence, making stones work efficiently, remaining flexible in response to changing situations, timing, analysing accurately and recognising the strengths and weaknesses of the opponent. In short, Go is a game it is impossible to outgrow.

## What makes Go so special

As an intellectual challenge Go is extraordinary. The rules are very simple yet attempts to program computers to play Go have met with little success; even the best programs fail to avoid making simple mistakes. Apart from beating the computer, Go offers major attractions to anyone who enjoys games of skill:

- There is great scope for intuition and experiment in a game of Go, especially in the opening. Like Chess, Go has its opening strategies and tactics but players can become quite strong knowing no more than a few basic patterns.
- A great advantage of Go is the very effective handicapping system. This enables players of widely differing strengths to play each other on equal terms without distorting the character of the game.
- The object in Go is to make more territory than the other player by surrounding it more efficiently or by attacking the opponent's stones to greater effect. On such a large board, it's possible to do somewhat badly in one area but still to win the game by doing better on the board as a whole.
- Every game of Go quickly takes on a character of its own – no two games are alike. Since a player needs only to have more territory than the opponent in order to win, there are very few drawn games though the outcome may hang in the balance until the very end.

## A brief history of the game

Go is probably the oldest board game in the world. It is said that the first Emperor of China – himself a mythological figure – invented the game in order to improve the mind of his slow-witted son.

Although originating in central Asia, historically it was in Japan that the game really flourished. Introduced into Japan around 740 AD, Go was initially confined to court circles but gradually spread to the Buddhist and Shinto clergy and among the Samurai. From this auspicious beginning, Go took root in Japanese society. The Japanese call the game *Igo* which has been shortened to Go in the West.

The Japanese government recognised the value of the game and in 1612 the top Go playing families were endowed with grants and constituted as Go schools. Over the next 250 years, the intense rivalry between these schools brought about a great improvement in the standard of play. A ranking system was set up which divided professional players into 9 grades or *dans* of which the highest was *Meijin*, meaning 'expert'. This title could be held by only one person at a time and was awarded only if one player outclassed all his contemporaries.

The most significant advances in Go theory were made in the 1670's by the *Meijin* Dosaku who was the fourth head of the Honinbo School and possibly the greatest Go player in history. The House of Honinbo was by far the most successful of the

four Go Schools, producing more Meijins than the other three schools put together.

The whole structure of professional Go in Japan was undermined in 1868 when the Shogunate collapsed and the Emperor was restored to power. The Go colleges lost their funding as the westernisation of Japanese society took hold. Today, the main organisation of professional Go players in Japan is the *Nihon Kiin*, which increasingly fosters interest in the game throughout the world.

## Go in the Far East today

The most important Go-playing countries in the Far East are Japan, China and Korea all of which maintain communities of professional players. Major tournaments in these countries attract sponsorship from large companies and a following akin to big sporting events here. Until relatively recently, the strongest players from Korea and China tended to go to Japan as professionals. Today they are more likely to remain in their own countries where they become national heroes. There are perhaps 50 million Go players in the Far East and many people who don't play still follow the game with keen interest.

**Japan** On his retirement in 1938, *Honinbo* Shusai ceded his title to the *Nihon Kiin* for an annual tournament between all leading players. Since then other major contests have been

**囲碁** *Igo* – the Japanese  
*Kanji* for Go

introduced, the most important being the *Meijin* and *Kisei* tournaments. More recently, young people have turned away from Go as they have from other traditional elements of Japanese culture. In spite of this there are still about 10 million Go players in Japan, some 500 of whom are professional.

**China** In its original home Go is known as *Wei Qi* which means 'surrounding game'. Go in China developed more slowly than in Japan and during the Cultural Revolution the game suffered through being regarded as an intellectual pursuit. As a result, it is only recently that Chinese players have matched the strength of the Japanese. Today, *Wei Chi* is being re-introduced in schools and tournaments are held

**圍棋** *Wei Qi* – the Chinese characters for Go

throughout the country. There is also the annual match between China and Japan which is followed with great interest. With the opening up of China, Chinese professionals are now frequent visitors at European Go tournaments. Go is also played professionally in Taiwan.

**Korea** Here Go is known as *Baduk* and is very popular. Koreans have a reputation for playing very fast. Fast or not they are also producing some of the world's strongest players. Both China and Korea have a growing population of very strong young players, a phenomenon which bodes well for the future development of the game.

## Go in Europe

Although the game of Go had been described by western travellers to the Far East in the 17th century it was not played in Europe until 1880 when a German, Otto Korschelt, wrote a book about the game.

After this some Go was played in Germany and Yugoslavia. However the game was slow to spread and it was not until 1958 that the first regular European Championship was held.

Nowadays, Go is played in most European countries. The standard of play is significantly below that of professionals in the Far East but the gap is steadily closing as more of the top European players are spending time studying the game in Japan.

In 1992, a European Go Centre was opened in Amsterdam with support from Iwamoto Kaoru.

## Go in Britain

Go has been played in Britain at least since the thirties but was not played on an organised basis until 1964 when the British Go Association – the BGA – was formed. Today, Go players can be numbered in thousands. There are over 50 Go clubs in Britain and the standard of play compares reasonably with the rest of Europe. Matthew Macfadyen, Britain's top player in recent years, won the European Championship in 1980, 1984, 1987 and 1989.

A British Championship and a British Youth Championship are held every year and there are Go tournaments throughout the country. These often attract upwards of a hundred players, including many beginners and young players. An open British Go Congress has been held at a different venue each year since 1968.



A ROUND AT A RECENT BRITISH GO CONGRESS HELD AT THE UNIVERSITY OF EAST ANGLIA

# *The British Go Association*

## **What the BGA does**

The BGA is a voluntary organisation which promotes the game of Go in the United Kingdom. Membership is open to all on payment of an annual subscription and the BGA aims to support players of all standards. Its most important activities benefit all BGA members:

- A bi-monthly newsletter is sent to all members.
- Each year members receive 4 issues of the British Go Journal, a magazine of news, comment, instructional articles and game commentaries.
- The BGA makes available a wide selection of books and equipment to members at moderate prices. These can be ordered by post or bought at most Go tournaments.
- In conjunction with international Go organisations, the BGA supports the playing and teaching of Go.
- The BGA helps to attract more players to the game through various promotional activities.

## **Services mainly for beginners**

The BGA maintains lists of members and of Go clubs. These are available to members wishing to find new opponents. The BGA also encourages the formation of new clubs – including school Go clubs – by providing ‘starter sets’ and advising organisers.

Two trust funds, the Castledine Trust and the Susan Barnes Trust exist to promote the playing of Go by young people.

## **Helping players to improve**

There is an extensive programme of Go tournaments during the year, some of which are organised by the BGA which maintains a tournament schedule. Other tournaments are organised by Go clubs, supported by the BGA in various ways. Most tournaments are organised in such a way as to allow players of all strengths to take part by matching them against players of approximately the same strength.

The BGA runs a game analysis service provided by some of the country’s strongest players. Strong players are also encouraged to visit clubs to give teaching and simultaneous games, subsidised by the BGA. The BGA also supports teaching visits by professional Go players.

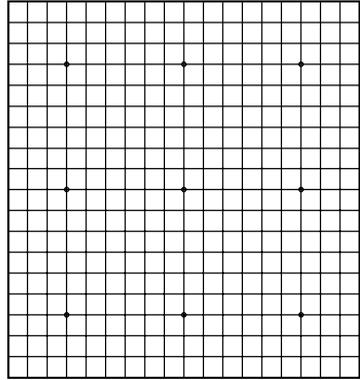
## **Services for stronger players**

The BGA records the results of top level tournament games and organises a grading system in which strong players achieve promotion through *dan* grades according to their results in tournament play.

A three stage British Championship is organised annually and the BGA also liaises with the European Go Federation and the International Go Federation. A British Youth Championship is also held annually.

# How to play Go

Although the normal size of a Go board is 19 by 19 lines, it is possible to use smaller sizes. Beginners can learn the basics on a 9 by 9 board and a quick game can be played on a 13 by 13 board without losing the essential character of the game. The following examples all use a 9 by 9 board.



## The rules and an example game

A game of Go starts with an empty board and each player has an effectively unlimited supply of stones, one taking the black stones, the other taking white. The basic object of the game is to use one's stones to form territories by surrounding vacant areas of the board. It is also possible to capture the opponent's stones by completely surrounding them.

The players take turns, placing one of their stones on a vacant point at each turn, Black playing first. Note that the

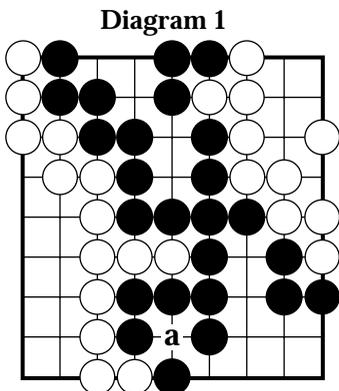
stones are placed on the intersections of the lines rather than in the squares. Once played, stones are not moved although they may be captured, in which case they are removed from the board and kept by the capturing player as prisoners.

At the end of the game the players count one point for each vacant point inside their own territory and one point for every stone they have captured. The player with the larger total of territory plus prisoners is the winner.

**Diagram 1** shows the position at the end of a game on a 9 by 9 board, during which Black captured one white stone which had been at a.

Black has surrounded 15 points of territory, 10 in the lower right corner and 5 towards the top of the board. Black's territory includes the point a formerly occupied by the stone he has captured. Adding his prisoner, Black has a total of 16 points.

White's territory is 17 points however so White wins the game by one point.



# Capturing stones and counting liberties

The points which are horizontally and vertically adjacent to a stone, or a group of stones, are known as **liberties**. An isolated stone or group of stones is captured when all of its liberties are occupied by enemy stones.

Diagram 2

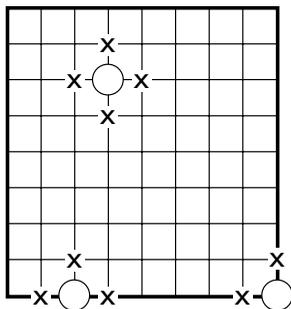


Diagram 3

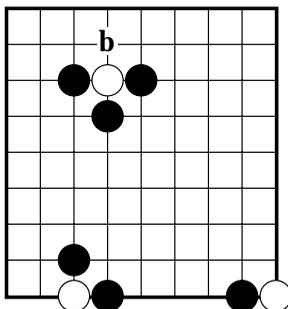
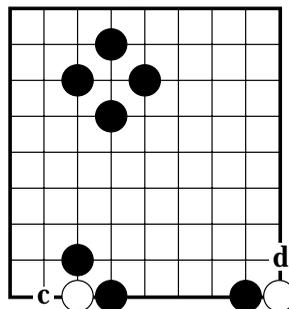


Diagram 4



**Diagram 2** shows three isolated white stones with their liberties marked by crosses. Stones which are on the edge of the board clearly have fewer liberties than those in the centre of the board. A single stone on the side is reduced to three liberties and a stone in the corner has only two liberties.

**Diagram 3** shows the same three stones of **Diagram 2** each with only one liberty left and therefore subject to capture on

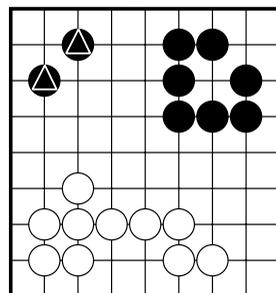
Black's next move. Each of these white stones is said to be in *atari*, meaning they are about to be captured.

**Diagram 4** shows the position which would arise if Black went on to play at **b** in **Diagram 3**. Black has taken the captured stone from the board and in a real game would keep it as a prisoner. The same remarks obviously apply to the other two white stones should Black play at **c** or **d** in **Diagram 4**.

## Groups

Stones occupying adjacent points constitute a solidly connected **group**. Two examples of such solidly connected groups of stones are shown in **Diagram 5**. It is important to remember that only stones which are horizontally or vertically adjacent are solidly connected; diagonals don't count as connections. Thus, for example, the two marked black stones in the top left of **Diagram 5** are not solidly connected.

Diagram 5



## Capturing groups of stones

As far as capturing is concerned, a solidly connected group of stones is treated as a single unit. As with isolated stones, a group is captured when all of its liberties are occupied by enemy stones.

In **Diagram 6** the groups of **Diagram 5** have both been reduced to just one liberty. Note that the Black group in the top right is not yet captured because of the internal liberty at f. The two stones at the top left of **Diagram 6** can each be captured independently at g or h.

In **Diagram 7** we see the position which would result if Black captured at e and White captured at f and g. The remaining black stone could be captured at h. As with the capture of a single stone, the points formerly occupied by the Black group have become White territory and vice versa.

A player may not 'commit suicide', that is play a stone into a position where it would have no liberties or form part of a group which would thereby have no liberties unless, as a result, one or more of the stones surrounding it is captured.

Diagram 6

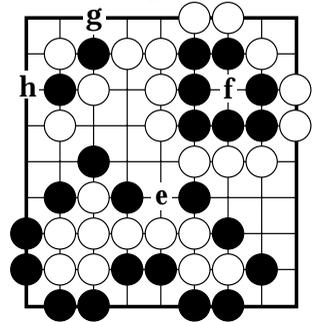
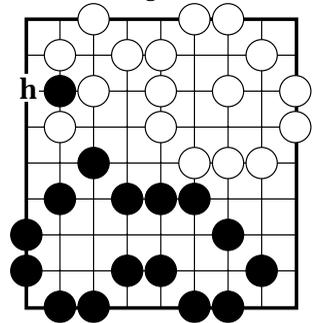


Diagram 7



**Diagrams 8 and 9** illustrate the rule governing capture. In **Diagram 8**, White may not play at i or j since either of these plays would amount to suicide; the stones would then have no liberties. However, if the outside liberties have

been filled, as shown in **Diagram 9**, then the plays at i and j become legal; they fill the last black liberty in each case and result in the black stones being captured and removed from the board as White's prisoners.

Diagram 8

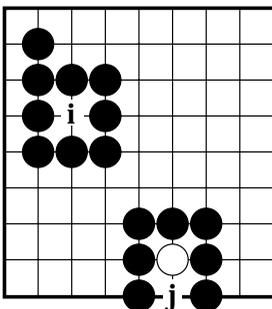
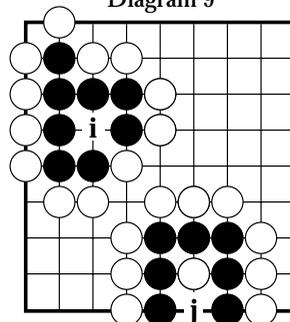


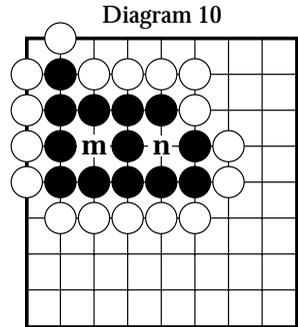
Diagram 9



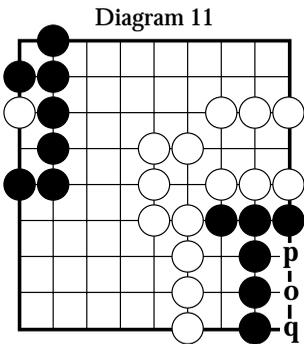
## Life and death and the concept of eyes

In **Diagram 9**, White was able to play at i and j because these plays result in the capture of the adjacent black stones. Since White's plays carry the force of capture they don't count as suicide.

A different situation is shown in **Diagram 10**. The black group here could only be captured if White were able to play at both m and n. Since the first of these plays would be suicide, there is no way that White can carry out the capture. These two separate spaces within the group are known as *eyes*.



Any group of stones which has two or more eyes is permanently safe from capture and is referred to as a **live group**. Conversely, a group of stones which is unable to make two eyes and is cut off and surrounded by live enemy groups is called a **dead group** since it is unable to avoid eventual capture.



In **Diagram 11**, the black group at the bottom is in danger of being captured. To ensure that his group has two eyes, Black needs to play at o. If White plays at o, the black group will no longer be able to make two eyes and cannot avoid eventual capture; White can always fill in the outside liberties and then play at p and q. Black plays at p or q would only hasten the group's demise.

The black group at the top left of **Diagram 11** is already alive even though there is a white stone inside one of its eyes. Since White can never capture the black stones, the white stone caught inside the group can't be saved.

In the course of a real game, players are not obliged to complete the capture of an isolated dead group once it is clear to both players that the group is dead. In this case, once White has played at o

in **Diagram 11**, the situation may be left as it is until the end of the game. Then, the dead stones are simply removed from the board and counted together with the capturing player's other prisoners.

## The *ko* rule

At the top of **Diagram 12**, Black can capture a stone by playing at **r**, resulting in the situation at the top of **Diagram 13**. However, this stone is itself vulnerable to capture by a White play at **u** in **Diagram 13**. If White were allowed to recapture immediately at **u**, the position would revert to that in **Diagram 12** and there would be nothing to prevent this capture and re-capture going on indefinitely. This pattern of stones is called *ko* – a term meaning eternity – and two other possible shapes for a *ko*, on the edge of the board or in the corner, are also shown in this diagram.

The *ko* rule removes this possibility of indefinite repetition by forbidding the recapture of the *ko*, in this case a play at **u** in **Diagram 13**, until White has played at least one move elsewhere. Black may then fill the *ko* but if he chooses not to do so, instead answering White's intervening move elsewhere, White is then permitted to retake the *ko*. Similar remarks apply to the other two positions in these diagrams; the corresponding moves at **w** and **v** in **Diagram 13** must also be delayed by one turn.

## *Seki* - a kind of local stalemate

Usually a group which can't make two eyes will die unless one of the surrounding enemy groups also lacks two eyes. This often leads to a race to capture but can also result in a stand-off situation, known as *seki*, in which neither group has two eyes but neither can capture the other due to a shortage of liberties. Two examples of *seki* are shown in **Diagram 14**. Neither player can afford to play at **x**, **y** or **z** since to do so would enable the other to make a capture.

Note that even though the groups involved in a *seki* may have an eye, as a general rule none of the points inside a *seki* count as territory for either player.

## The end of the game

The game ends by agreement – when neither player believes that he can make more territory, capture more stones or reduce his opponent's territory by

playing on. A player who considers the game to be over may pass instead of playing a stone and two consecutive passes end the game.

Diagram 12

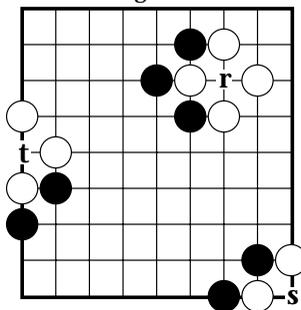


Diagram 13

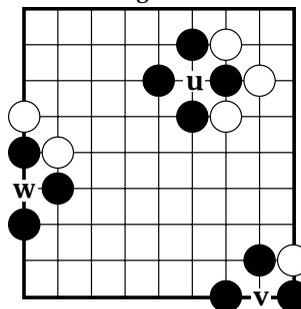
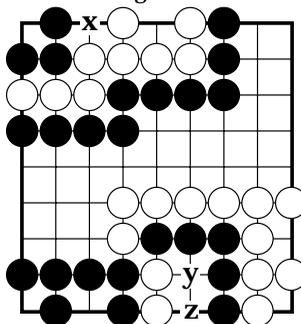


Diagram 14



## The handicap system

As remarked in the introduction, one of the best features of the game of Go is its handicap system. A weaker player may be given an advantage of anything up to nine stones which are placed on the board in lieu of his first move.

Through the grading system, any two players can easily establish the difference in their strength and therefore how many stones the weaker player should take in order to compensate for the difference in strength. Since a player's grade is measured

in terms of stones, the number of stones for the handicap is simply the difference in grade between the two players.

There is an established pattern for the placement of handicap stones, represented by the dots which may be found marked on any Go board. This is shown in **Diagram 15**, seen from the Black player's point of view. For handicaps of two or three stones, where the stones can't be placed symmetrically, the convention is that the far left corner is left vacant.

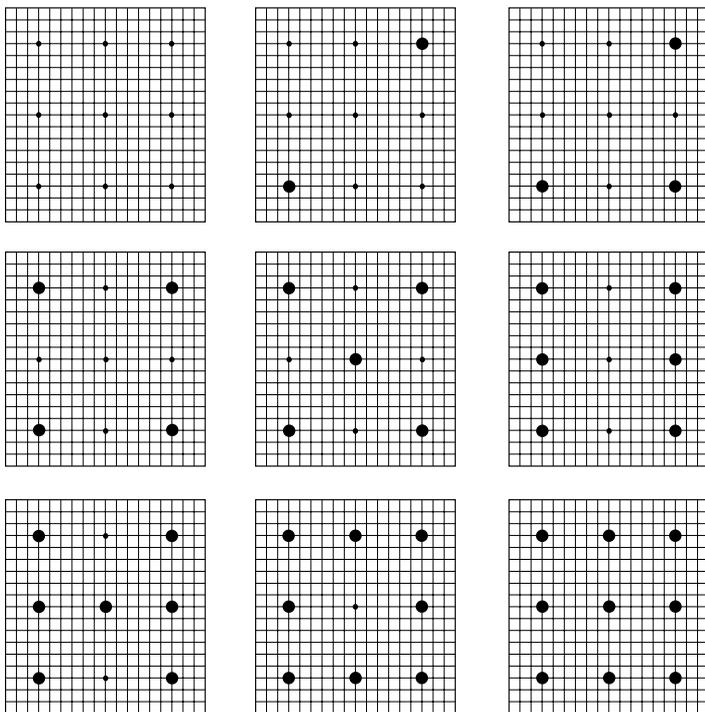


Diagram 15

## Japanese and Chinese rules of Go

The rules described in this booklet are the Japanese rules and these are the rules most commonly used in the West. The Chinese use a different system of rules

which are essentially the same but which notably involve a different method of counting the score. The two sets of rules usually lead to the same game result.

# An example game of Go

Go is normally played on a 19 by 19 board (note it's 19 lines not 19 squares) but smaller boards are recommended for beginners. Even boards as small as 5 by 5 can provide an interesting game and 9 by 9 or 13 by 13 boards are often used even by strong players for a quick game.

The example game shown here is played on a 9 by 9 board and illustrates most of the rules in action. It's a game played between two professionals so don't expect to grasp all that is going on at a

first reading. Try to see how the players use the threat of capture to develop their positions. Notice also how they try to connect their own stones and separate those of the opponent.

Most games of Go start fairly peacefully with each player loosely mapping out territory in different parts of the board. On a full size board play usually starts in the corners. In this example on a small board, Black chooses to play his first move in the centre.

The numbered stones in the figures show the order in which the stones are played. In later figures, stones which have already been played are not numbered.

With 1 and 3 in **Figure 1**, Black exerts influence over the right side of the board while with 2 and 4, White lays claim to the top left corner. With 5 Black aims to exclude White from the bottom half of the board. White leans against the lone black stone with 6, reducing it to two liberties. With 7, Black strengthens his stone at 5 by extending to 7 and now his group has 4 liberties.

If **Figure 2** seems somewhat alarming, you may find it easier to look back at **Figure 1** and imagine adding the stones one at a time. Better still, play the game out on a board.

After the 8 - 9 exchange, White pushes towards the bottom with 10 but rather than defending the bottom left corner, Black changes direction with 11, now trying to fence off the top right. Again White leans against the black stone and again Black strengthens his stone by extending to 13.

White pushes into the gap with 14 and Black blocks at 15. If Black succeeds in surrounding all of the area to the right and bottom of the board, Black will have more territory than White has in the top left. Accordingly, White cuts Black into two with 16, aiming to destroy the Black area at the bottom in the course of this attack. Note that the three black stones to the left of 16 now have only two liberties.

Figure 1 (1 - 7)

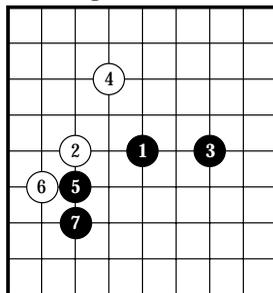
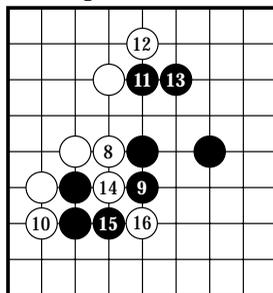


Figure 2 (8 - 16)



Black must do something to avoid the imminent capture of the three stones cut off by White 16. In **Figure 3**, Black 17 and 19 are both threats to capture White who flees in turn with 18 and 20 (can you see why 17 and 19 are threats?). With 21, Black has stabilised his group and White's three stones are trapped inside Black's sphere of influence.

The outcome of the game now hinges on the fate of these stones. If they die and White obtains no compensation, White will lose. If they live, or can be sacrificed in order to reduce Black's territory, White can still win the game.

White plays 22 in **Figure 4** in an attempt to expand his position along the edge and to reduce the liberties of the black stone at a. Black blocks at 23, preventing White from forming a living shape along the second line. With 24, White threatens to play at 25. Due to the presence of 22, this move would simultaneously threaten the capture of the black stone at a and of the two stones to the left of 25. Since either of these captures would save the white stones below, Black plays 25 himself, putting an end to any possibility of the white stones' escape.

Unable to escape and with insufficient space to be able to form two eyes, White plays 26 on the outside. His plan is to sacrifice the stones on the right and in the process to destroy Black's prospective territory at the bottom.

**Figure 5** shows White's plan put into effect. Black really has no choice about 27. Black would like to defend the stone to the right of 26 but if White gets the chance to block at 27, Black's advantage in the fight will be lost. White's plays at 28 and 30 are a device to increase the value of the sacrifice; Black must play at 31 to prevent White from getting an eye by playing there.

With 32 and 34, White captures Black 21 and now Black must capture the sacrificial white stones with 35, 37 and 39 while White creeps along the bottom with 36 and 38. Note that a play to the right of 38 is White's privilege. It is not urgent since Black cannot play there. Can you see why?

With 39, the fight in this part of the board comes to an end. Although White has lost 7 stones, he has captured one of Black's and succeeded in destroying the bottom area, even making a couple of points of territory in the bottom left corner. Furthermore it is still White's turn to play and he is free to take the initiative elsewhere: to expand his own area or reduce his opponent's; to exploit Black's weaknesses or to patch up his own.

Figure 3 (17 - 21)

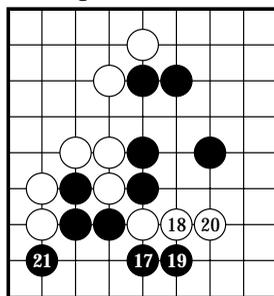


Figure 4 (22 - 26)

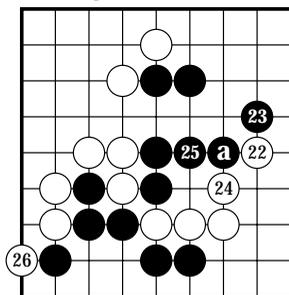
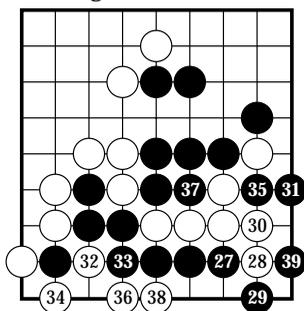


Figure 5 (27 - 39)



Before looking at the next figure, try to decide for yourself where it is most profitable for White to play next.

If your guess for White's next move was somewhere near White 40 in Figure 6 you can congratulate yourself. This is where the boundary between White's territory and Black's is still most uncertain and the first to play here will make the greatest gain. White 40 removes White's only weakness, the possibility of a Black cut at the same point. It also prepares for White to slide into the top right which would destroy prospective Black territory there.

Black 41 blocks White's path and 42 to 45 complete the boundary between the two territories here. The game is almost over. Can you see the best place for White to play next?

White 46 in Figure 7 pushes into the one remaining gap in Black's wall. Black 47 shuts White out and 48 prevents the capture of 46. Strictly speaking the game is over at this point since there is nowhere either player can play which would increase his own territory or decrease the opponent's. Black would like to play at 50 but if he did so, the black stones would have only one liberty and White could capture them with a play to the right of 50.

Black 49 and 50 complete the formalities. After 49 and the removal of the 6 white stones, Black could play at 50. This would make the point to the right of 50 Black territory, so White plays at 50 to prevent a Black play there.

Similarly, the moves in Figure 8 make no difference to the score but are played to clarify the situation and make counting easier. It is not necessary for Black to complete the capture of the white stone at a – White admits that it is dead. There is no point in either player playing inside the other's territory. Territory is so called precisely because it is an area which is secure against invasion. Any stone the opponent played inside it would be killed. Neither player could hope either to form a living group inside, or to escape from, the other's territory. Neither can the players hope to kill any of the opponent's stones. All their stones – except White's dead stone at a – are effectively connected, forming living groups with at least two eyes.

Figure 6 (40 - 45)

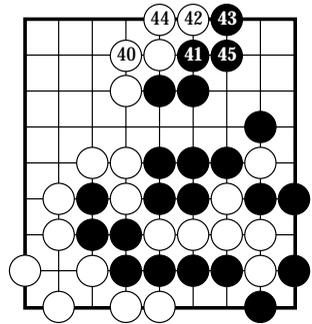


Figure 7 (46 - 50)

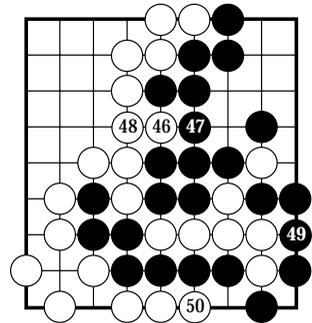
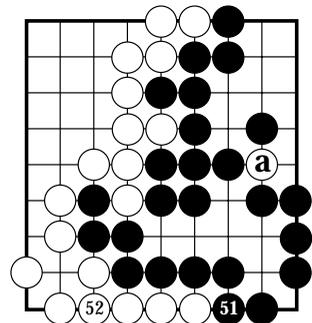


Figure 8 (51 - 52)

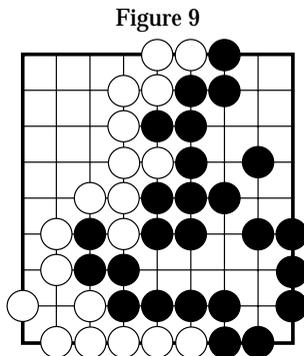


## The result of the game

At the end of the game, any dead stones are removed from the board. This results in the position shown in Figure 9.

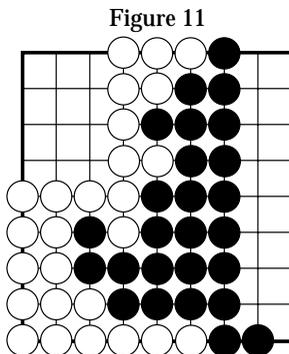
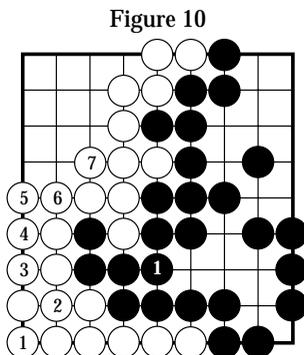
There are 18 vacant intersections inside Black's territory and Black has taken 7 prisoners altogether, making a total of 25 points. White's total is only 20, made up of 19 points of territory and 1 prisoner so Black has won the game on the board by 5 points.

The process of counting is usually simplified as shown in Figures 10 and 11.



- Step 1** Any neutral points, that is unoccupied points which lie between black stones and white stones, are filled by either player. In this game there are no neutral points to fill.
- Step 2** Each player puts his prisoners into his opponent's territory. This produces the position shown in Figure 10. The players' territories are reduced by one point for every stone they have lost.
- Step 3** The territories may be re-arranged to facilitate counting. This produces Figure 11 in which we see that Black has 17 points and White has 12 points.

The scores in this figure are the result of each player subtracting from the value of the opponent's territory the number of prisoners he has captured, rather than adding them to his own total but the end result is the same: Black wins by 5 points.



### *Komi*

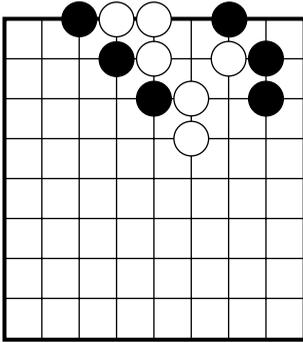
Black has a natural advantage in playing first and in games between players of the same strength it is usual to compensate White for the disadvantage of playing second by deducting points from Black's score. These points are called *komi* and from experience in actual play, the value of having the first move can be assessed at about 6 points on a full size board. On a nine by nine board, *komi* is nearer 8 points.

Looking again at our example game, although Black has won the game on the board by 5 points, if *komi* were 8 points then White would win the game by 3 points.

# Go Problems

Have a go at the following!

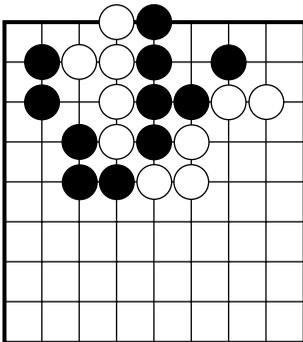
Problem 1



Black to play

There is a clever way for Black to capture three white stones, if you can find the right move.

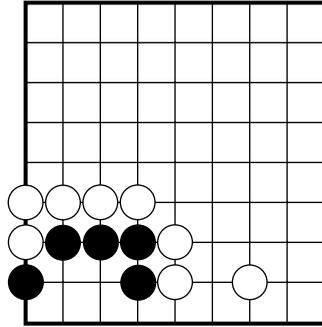
Problem 2



White to play

There is a way for White to capture five black stones. You need to read a few moves ahead to see the answer to this problem.

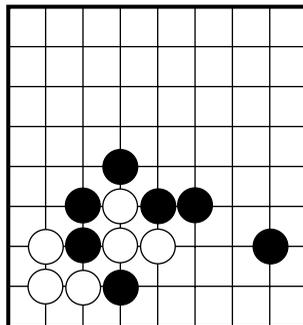
Problem 3



The Black group in this diagram cannot escape White's encirclement. If these stones are to live, they must make two eyes. Where should Black play to guarantee two eyes for the black stones?

If it is White's turn, can you see where to play in order to kill the Black group? There is more than one way to do this.

Problem 4



In this fight, three white stones are vulnerable to capture. From which direction should Black give atari in order to capture these stones?



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