SKITTLES ROOM

ChessCafe.com is please to present the following article by Dr. Rainer Staudte. Originally conceived to assist teachers in instructing children and other novices about pawn endings, with the help of his friend, German grandmaster and **ChessCafe** columnist Karsten Müller, it has been adapted as an article suitable for any player seeking to master the nuances of these subtle endings.

Dr. Staudte's has substantial experience in the fields of mathematics and logic programming. In chess he focuses mainly on endgames and studies. Now, in the first of two parts...

Opposition Clockwise
Part 1

by Rainer Staudte

1 Motivation

In the first section of this article I will look at the endgame king and pawn versus king, especially the case when the kings are near the pawn. While the **rule of the square** allows a quick evaluation of a position with very distant kings, it is more difficult, when the kings are near the pawn. Then the **theory of key squares** can be used, but it is so complicated that even experienced players blunder from time to time. It is especially difficult when you don’t know the theory of key squares. In practical games this endgame does not happen very often, but you should note that simplifications may play a role, even if the endgame itself does not arise.

In the second section of the article I will deal with the opposition and its application in “simple” pawn endings, thereby building on the knowledge we have gained in the first part.

The third section deals with a relatively unknown (and partly new) theory to describe the **techniques shouldering away**

and **encirclement** easier and more comprehensive. The relative position of the kings is described with a model based on the face of a clock. Such a model seems to be new (or at least little known) to endgame theory.

2 Foundations

A **key square** gives one player the key to achieve a certain goal. Its occupation by the king guarantees that the aim is reached. In the endgame king and pawn vs king the aim is of course a win. In other endgames the occupation of a key square does not automatically secure the win as it can also assure that a lesser goal is achieved. For example in an ending king+pawn vs king+pawn with a blocked pair of pawns the occupation of a key square may secure the win of the enemy pawn, but not necessarily the win of the game. And please note that for a win it is not necessary either to move to a key square. You can sometimes win by other means, e.g., your opponent's king may be out of the square of your pawn. For such examples see the following exercises 1-3.

Exercises

1.Frits Böttcher
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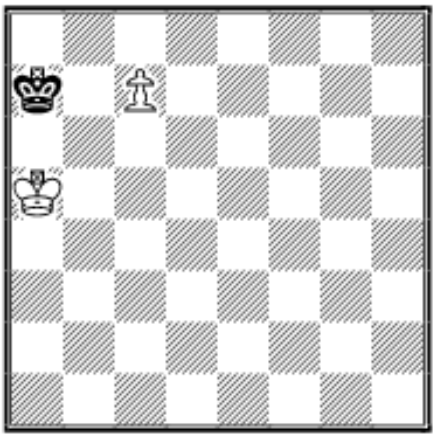
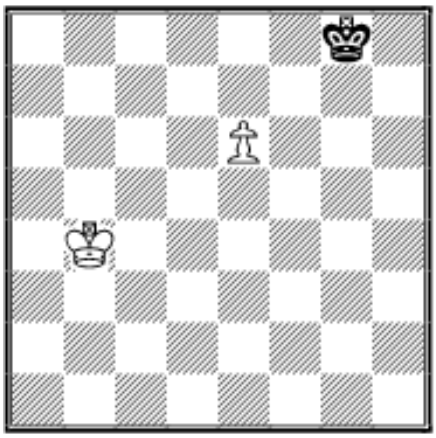


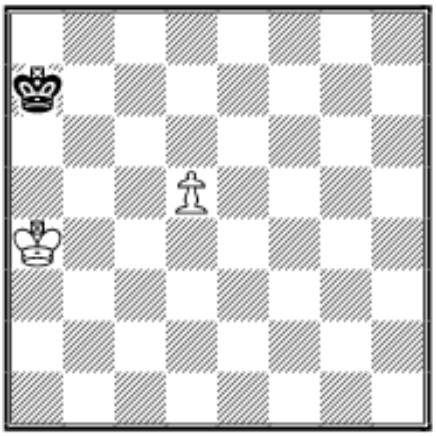
White to move

2.Marcel Lamare
La Stratégie 1930



White to move

3.Philipp Bondarenko
L'Italia Schacchistica 1968

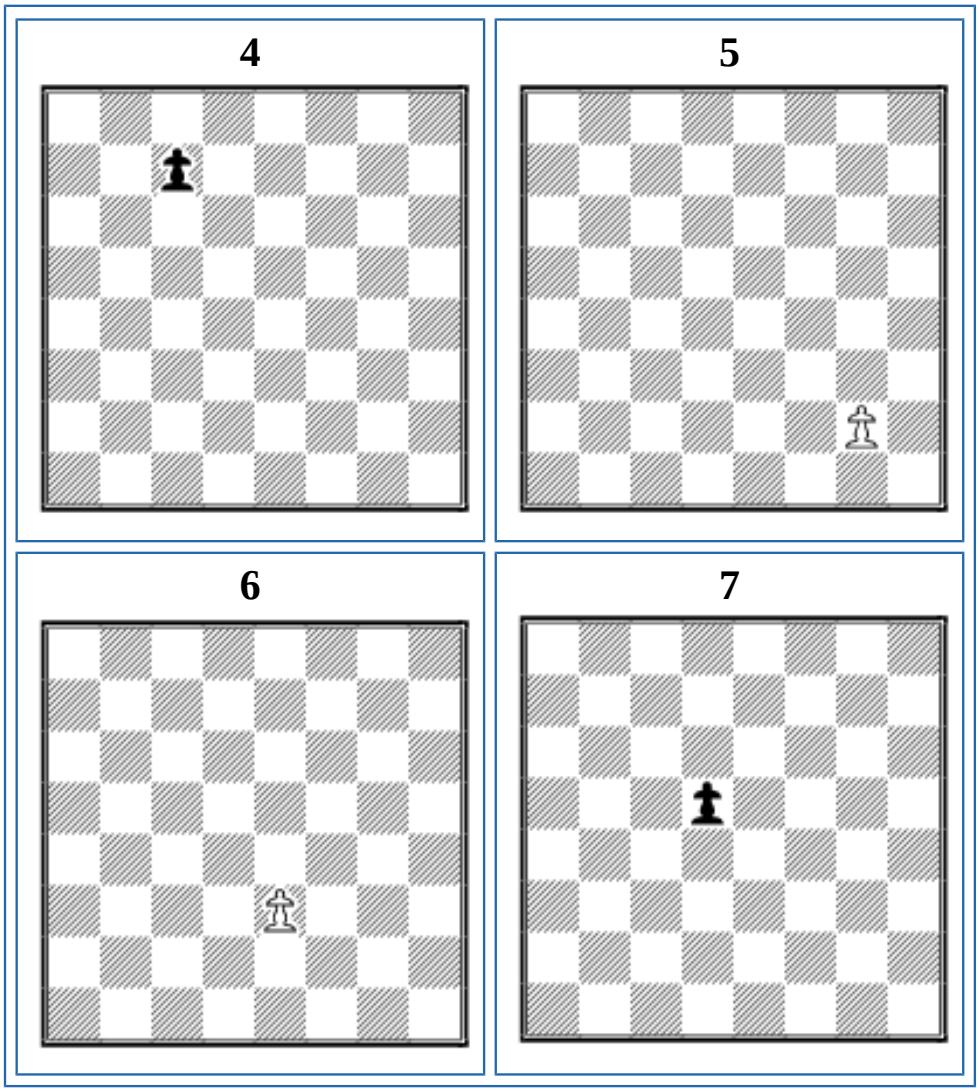


White to move

3 Pawn in the Middle of the Board

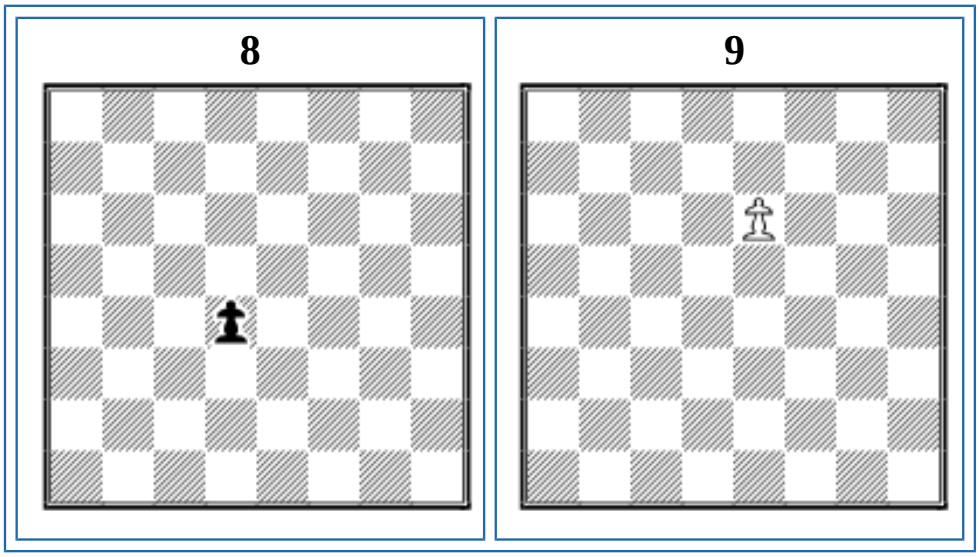
The rules in this section are valid for all pawns which are at least two squares away from promotion, with the exception of rook's pawns. For rook's pawns different rules apply. If the pawn is still three or more squares away from promotion, then there are 3 key squares. They are on the rank two in front of the pawn. To be more precise: the square two in front of the pawn and its left and right neighbors. So a black pawn on f5 has the key squares e3,f3 and g3.

Exercise 3.1 (more than 3 square to the promotion square): Find the key squares in the following diagrams!



Now to a pawn on the 5th or 6th rank (for Black, the 4th or 3rd rank): such a pawn has of course the three key squares the other pawns have as well (the square two in front and its left and right neighbors). But it has more key squares: the three squares on the rank directly in front are also key squares. So such a pawn has 6 key squares, e.g. a white pawn on f5 has the key squares e6, f6, g6, e7, f7, g7.

Exercise 3.2: Find the key squares in the following diagrams!

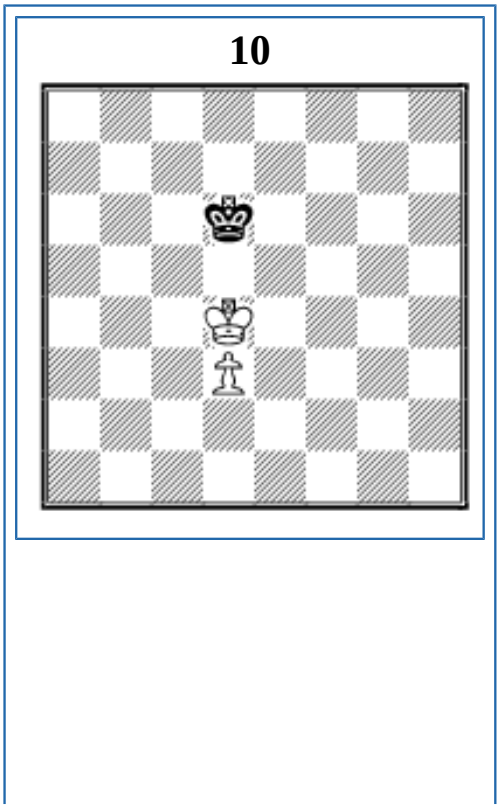


Exercise 3.3: Why is it not necessary to introduce the theory of key squares for a pawn one square before it promotes?

4 Fight for the Key Squares

In this section I will first deal with the question: when can a key square be occupied? After that I will show, how the threat to occupy a key square can be combined with other motifs.

Exercise 4.1: Analyse the positions 10-12 with White and with Black to move. What is result with best play in the 6 cases?



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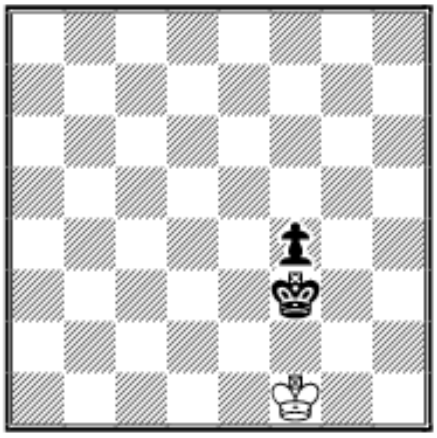

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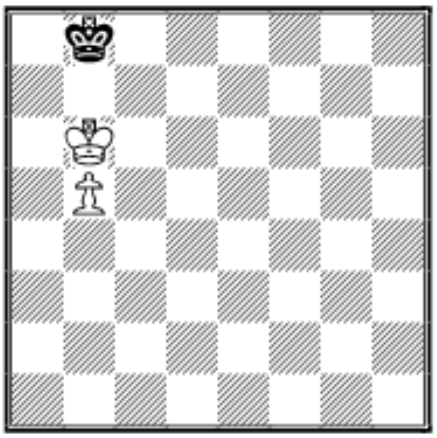
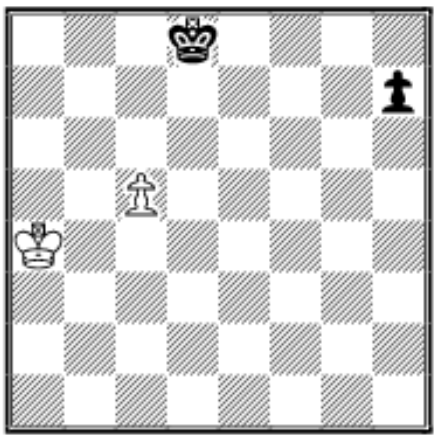
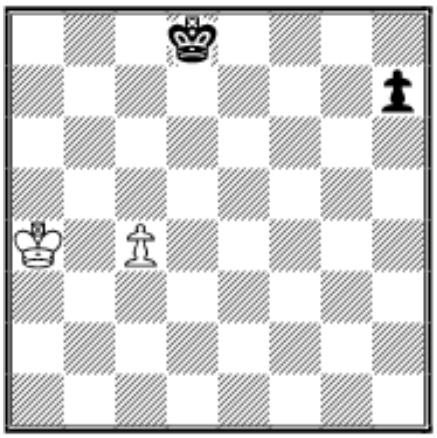


Exercise 4.2 (Rule of the Square and Key Squares): The rule of the square and the theory of key squares help to understand the play and to determine the result in the following positions.

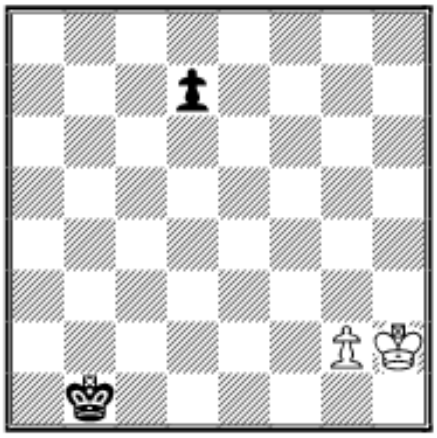
13. Josef Moravec
Ceskoslovensky Sach 1952



14. Jarl Ulrichsen
Postsjakk 1999

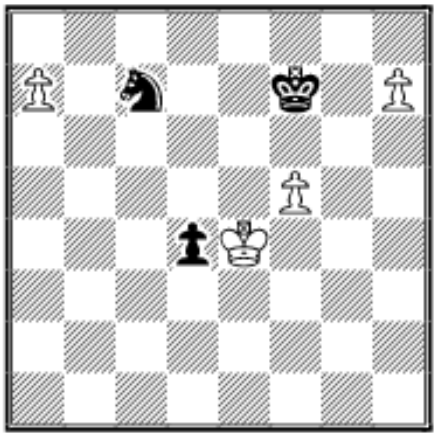


14a. Josef Moravec
Ceskoslovensky Sach 1952



Exercise 4.3

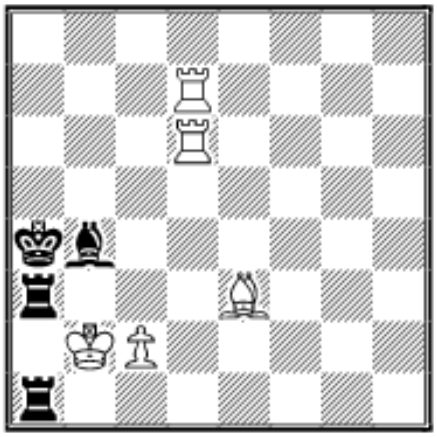
15. P.Svidler - V.Anand
Dos Hermanas 1999



This position arose at move 69. White offered a draw

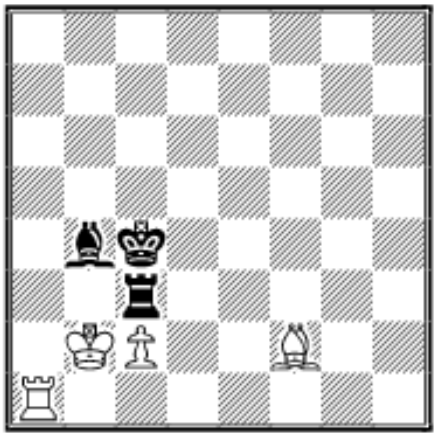
prematurely. How should the pawn ending be evaluated after 1.Kxd4! Nb5+ 2.Kc5 Nxa7 3.Kb6 Nc8+ 4.Kc7 Ne7 (4...Na7 5.Kd7 Nb5 6.h7 Kg7 7.f6+! Kxh7 8.f7 Kg7 9.Ke7 +-) 5.h7 Nd5+ (5...Kg7 6.f6+! +-) 6.Kd6 Kg7 7.Kxd5 Kxh7?

16. Martin Minski
Schach 1997



White can win by the combination 1.Ra6+! Ba5 2.Rxa5+! Kxa5 3.Ta7+ Kb4 4.Txa3 Txa3 or 1...Kb5 2.Rxa3 Rxa3 3.Tb7+ Kc4 4.Rxb4+ Kxb4.

17. Leonid Kubbel
Krasnaya Gazeta 1934



Exercise 4.3 (Calculation without the board):

A) Look at the given main line below diagram 15 until 7.Kxh7 and determine the correct result of the position with Black and White to move.

B) Analyse the position at the end of the given lines in diagram 16. Start with the moves that give Black only a very few options.

C) Try to solve diagram 17 without a board. Show that the idea of diagram 16 has already been realised here.

5 Rook's Pawns

It is well known that the game is drawn if the defending king manages to get on the promotion square of the rook's pawn. If the attacking king is on the promotion square, then the game may still end in a draw if it is cut off on the edge. But the occupation of a key square prevents both cases. A rook's pawn has two key squares. They are on its neighboring file near the promotion square. So both key squares are independent of the actual position of the rook's pawn on its file. So, e.g., a white pawn on h2 has the key square g7 and g8 and a white pawn on h5 has the same key squares.

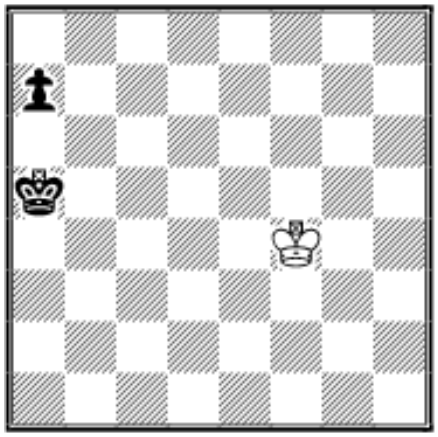
Note: The occupation of a key square is precisely speaking not enough to win. The opposing king must not be able to capture the pawn of course. But these situations are easy to spot and not interesting for endgame theory. Exceptions also exist for a non-rook's pawn, but they are even easier to spot. Then it is not sufficient to occupy a key square, if the pawn can be captured immediately.

Exercise 5.1 (Key squares of a rook's pawn): What are the key squares for a black pawn on a6?

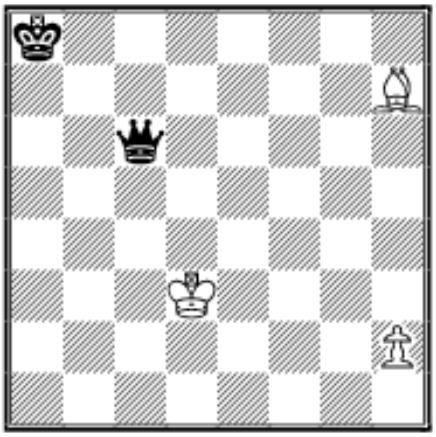
Exercise 5.2 (Calculation of variations and key squares): Even masters make big mistakes from time to time. After 1.Ke4? all was lost in diagram 18. Find the right path to a draw and then analyse the more complicated position in diagrams 19, 20 and 21.

Diagrams 18-34: ***White to move***

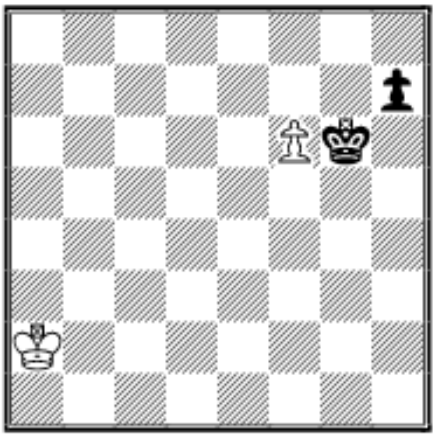
18. Berger - Mason
Breslau 1889



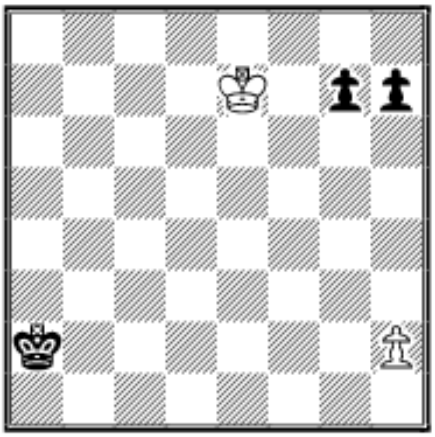
19. Philipp Bondarenko
Put 1977



20. Jarl Ulrichsen
Postsjakk 1999



21. Nicolay Grigoriev
Izvestya 1931



6 Exercises

22. George Walker
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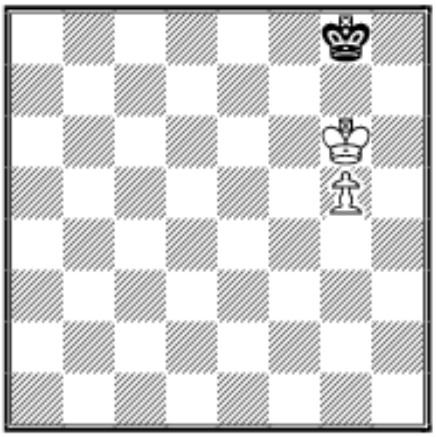
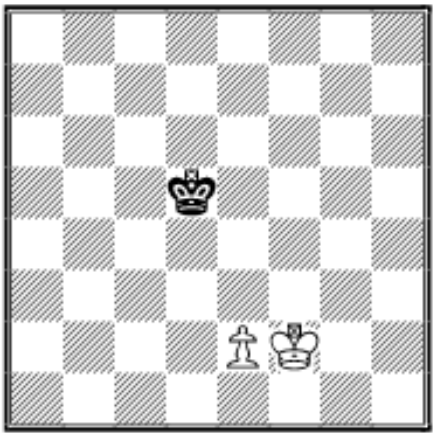
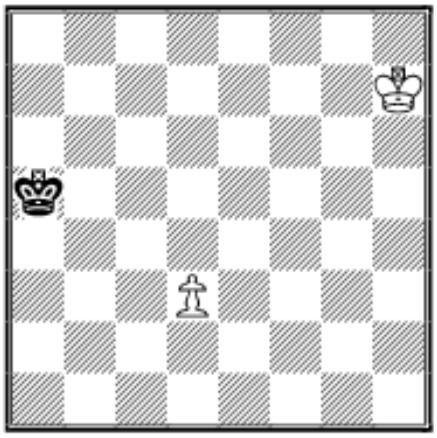


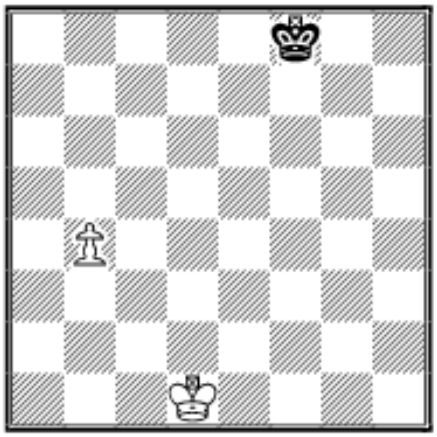
23. Marcel Lamare
La Stratégie 1920



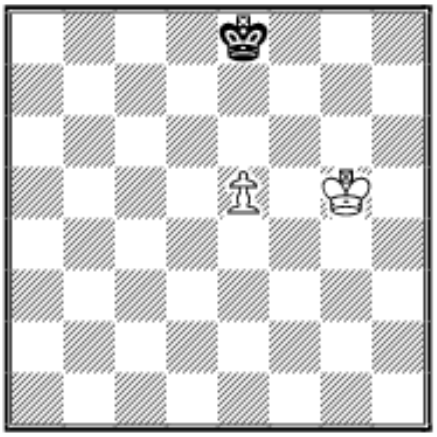
24. Rinaldo Bianchetti
L'Italia Schacchistica 1925



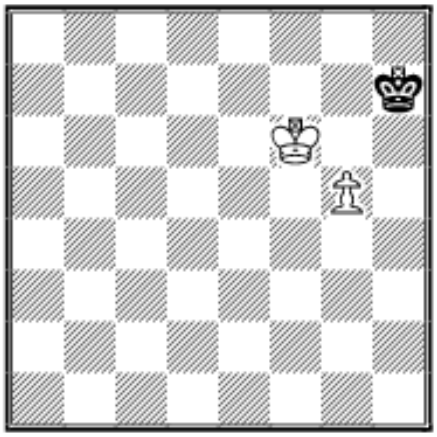
25. Nicolay Grigoriev
Shakhmatnoye tvorchestvo N.D.Grigorieva



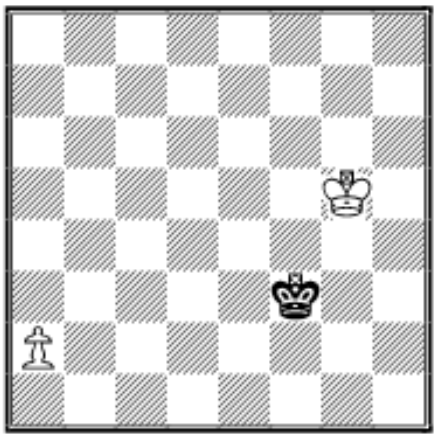
26. Marcel Lamare
La Stratégie 1920



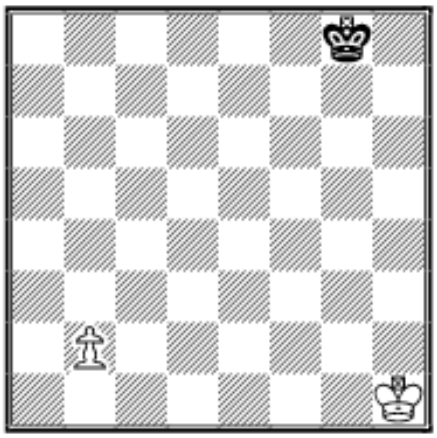
27. George Walker
New Treatise on Chess 1841



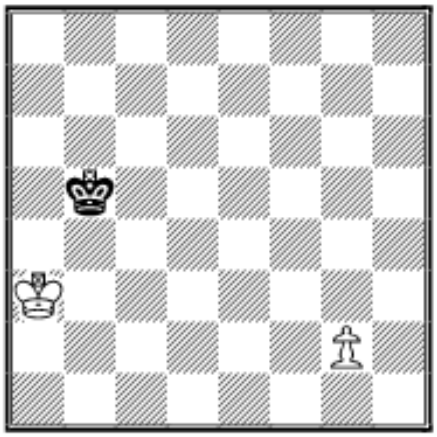
28. Irving Chernev
1960



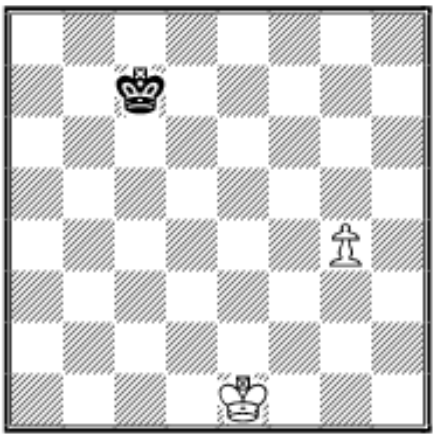
29. Rinaldo Bianchetti
L'Italia Schacchistica 1925



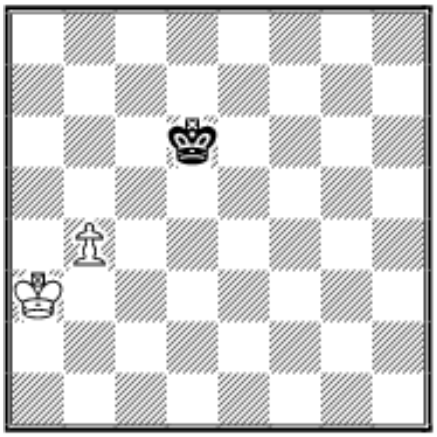
30. Nicolay Grigoriev
Praktikcheskie shakhmatnie okonchaniya



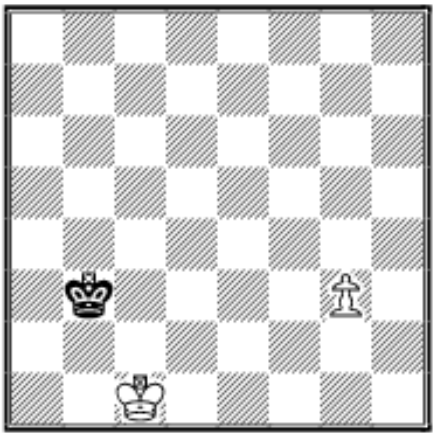
31. Emmanuel Schiffers
Samouchitel shakhmatnoi igry



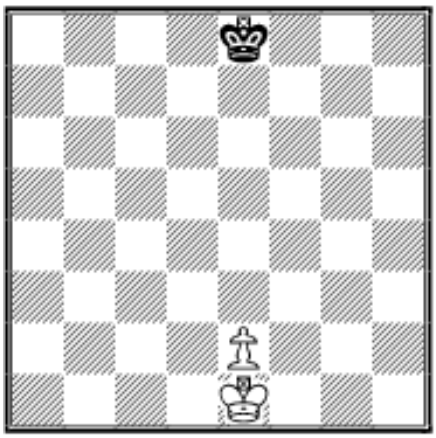
32. Alexander Hildebrand
Springaren 1954



33. Johann Berger
Theorie und Praxis der Endspiele 1890



34. Giambattista Lolli
Osservazioni teorico-pratiche sopra il giuoco degli scacchi 1763



7 The Opposition

The theory of opposition describes rules for the fight of the kings for certain squares, e.g., key squares. So it is mainly important in pawn endings.

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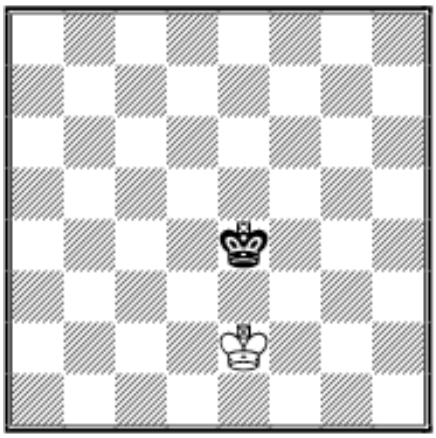

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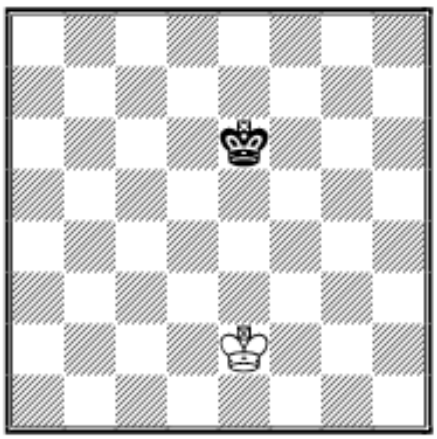

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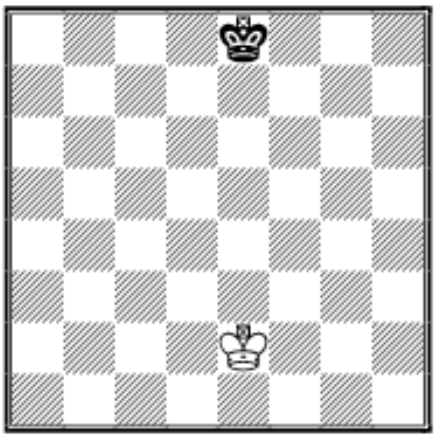
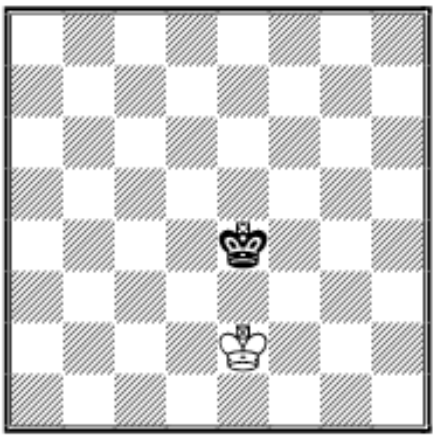


Opposition in chess relates to the relative position of the kings. For example two kings that are a knight's move away from each other are not in opposition. We distinguish between close or normal opposition (diagram 35), distant opposition (diagram 36) and very distant opposition (diagram 37). Furthermore there is a generalisation of opposition (see below). The player who has just moved into the opposition is said to have gained the opposition. The other side has lost it as he has to give way. In a certain sense the opposition is a position of mutual zugzwang as it is disadvantageous for both kings to give way.

8 Definition of Opposition

If we don't consider the generalised opposition for the moment then the opposition can be described by the following conditions (compare diagrams 38-40): the kings are on one file, rank or diagonal (diagram 40) and there is an odd number of squares between them. If the kings are on a file (diagram 38), then it is called vertical opposition. If they are on a rank (diagram 39), then it is the horizontal opposition. When fighting for the key squares in king+pawn vs king the vertical opposition is the most interesting.



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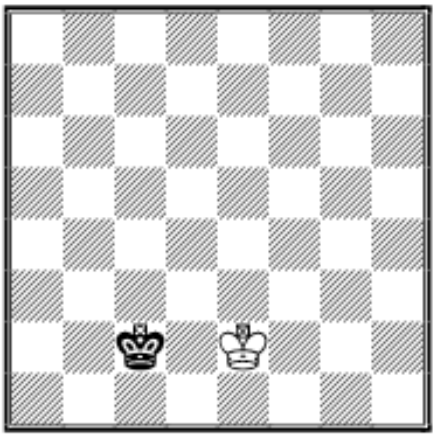

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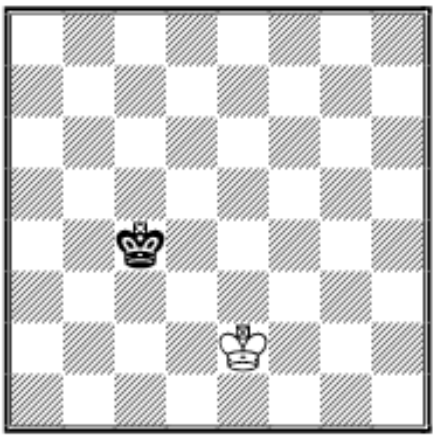

9 The normal (close) opposition

In close (normal) opposition there is one square between the kings. When one king has to move then the other can gain space or take the opposition again on a neighboring square. So sometimes the opposition is shifted from file to file or rank to rank until a certain file or rank is reached and sometimes the diagonal or distant opposition has to be transposed into a close

opposition to achieve a certain goal.

Exercise 9.1 (Close opposition): Analyse the positions 41-46 (41-44 both with White and Black to move). Look especially at the importance of close opposition for the play!

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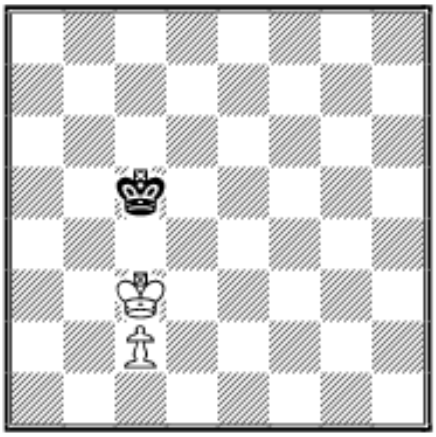

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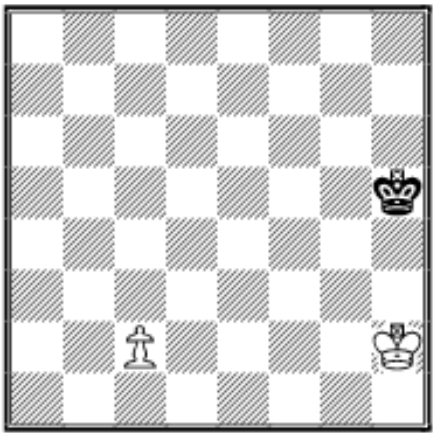

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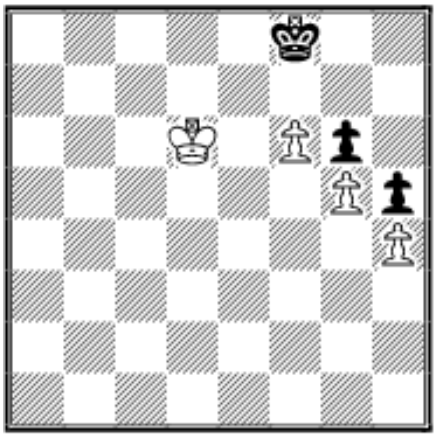

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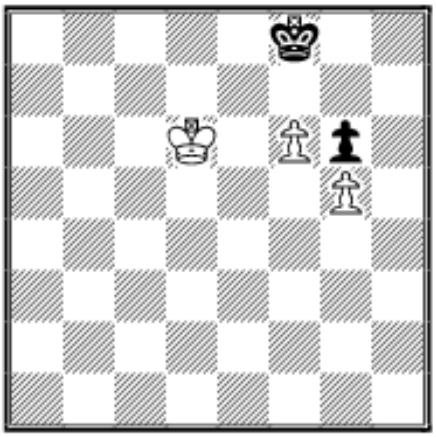
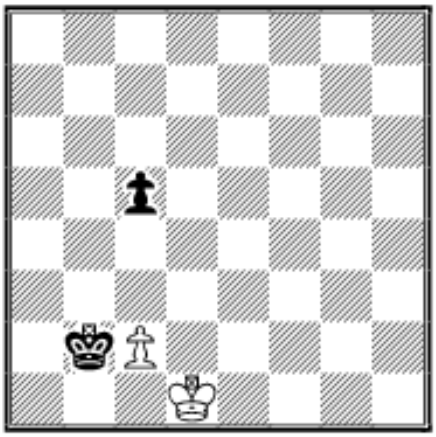
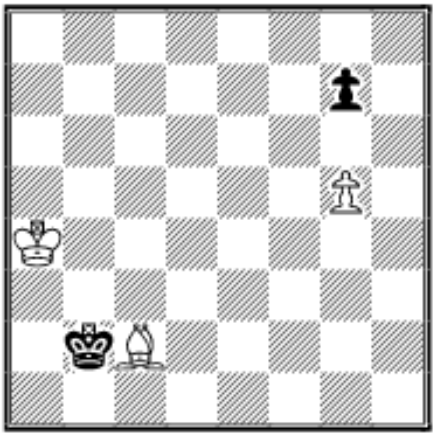


45. L'Hermet - Johnsteyn
corr. 1877



White to move

46. Henri Weenink
Kagan's Neueste Schachnachrichten 1920



White to move

Solutions

1 1.c8Q? stalemate: 1.c8R! +-.

2 1.Kc5! Kf8 2.Kd6! Ke8 3.e7! Kf7 4.Kd7! 1-0.

3 1.Kb5! Kb7 2.d6! Kc8 3.Kc6! Kd8 4.d7! Ke7 5.Kc7! 1-0.

4 The key squares of a black c7-pawn are b5, c5, d5.

5 The key squares of a white g2-pawn are f4, g4, h4.

6 The key squares of a white e3-pawn are d5, e5, f5.

7 The key squares of a black d5-pawn are c3, d3, e3.

8 The key squares of a black d4-pawn are c3, d3, e3, c2, d2, e2.

9 The key squares of a white e6-pawn are d7, e7, f7, d8, e8, f8.

Key squares of a pawn one rank before the promotion square are the promotion square itself and its neighbouring squares. But we do not need such a definition, because one can easily see if the pawn can promote or not.

10 White to move: draw. Black to move: White wins.

11 Black wins, whoever moves first.

12 White wins, whoever moves first. But note that White to move only wins by 1.Ka6! Ka8 2.b6 Kb8 3.b7 +-. After 1.Kc6 Ka7 the move 2.b6+? only leads to stalemate because of 2...Ka8!. So White must return with 2.Kb6! Kb8 and then play 3.Ka6!+-

13 White draws by 1.Kb5 h5 2.Kc6 White threatens to enter the square of the h-pawn 2...h4 3.Kb7 as he occupies a key square.

14 The same idea is here even one move deeper: 1.Kb5 h5 2.Kc6 h4 3.Kd7 h3 4.c5 h2 5.c6 h1Q 6.c7+ Ka7 7.c8Q =

14a After 1.Kg3 Kc2 2.Kf4 Kc3 (threatening 3…d5) 3.Ke5 Black can try 3…Kc4, but he loses nevertheless due to promotion with check: 4.g4 d5 5.g5 d4 6.g6 d3 7.g7 d2 8.g8Q+.

15 White will reach the square e7 and win. With Black to move White still wins as he could come via e6 to occupy e7 or g7.

16 The try 5.Bc5+? Kxc5 6.Kxa3 Kc4 only leads to a draw, but 5.Be1+ Ka4 6.Bc3! brings Black into zugzwang and wins: 6...Rxc3: 7.Kxc3 Kb5 8.Kd4 and White has occupied a key square.

17 After 1.Ra4! Ra3! 2.Rxb4+! Kxb4 we reach the same position.

Exercise 5.1: The key squares for a black pawn on a6 are b1 and b2.

18 After 1.Ke4? Black gave the body check 1...Kb4 2.Kd3 Kb3 3.Kb2 and occupied the key square b2. White lost without a fight. Instead he could have drawn with 1.Ke3! Kb4 2.Kd2 Kb3 3.Kc1 **=.**

19 1.Be4 Kb7 and now 2.Bxc6? is wrong as Black's king reaches the square of the pawn after 2...Kxc6 3.h4 Kd5 Instead White has to win a tempo as follows: 2.Kd4! Kc7 3.Bxc6 Kd6 4.Bd5 Ke7 5.Ke5 King and the bishop manoeuvres skillfully 5…Ke7 5.Ke5 Kf8 6.Kf6 and the pawn has a free path. After 2...Qxe4 + 3.Kxe4 White's king can occupy the key square g7.

20 1.Kb3 has two aims: occupation of e7 and stopping Black's king from reaching the key squares g1 and g2 1...h5 2.Kc4 h4 3.Kd5 (threatens 4.Ke4) 3…h3 4.Ke6 h2 5.f7 Kg7 6.Ke7 h1Q 7.f8Q+ = or 1...Kxf6 2.Kc4 Ke5 (threatens 3...Ke4) 3.Kd3 Kf4 (threatens 4...Kf3) 4.Ke2 Kg3 (threatens 5...Kg2) 5.Kf1 Kh2 6.Kf2 =.

21 1.Kf7? g5 2.Kg7 Kb3 3.Kxh7 Kc4 4.Kg6 g4! 5.Kf5 Kd5 6.Kxg4 Ke6 7.Kg5 Kf7=; 1...h5 2.Kxg7 h4! 3.Kf6 Kb3 4.Kg5 h3! 5.Kg4 Kc4 6.Kxh3 Kd5 7.Kg4 Ke6 8.Kg5 Kf7=; 1.h4! h5 (1...h6 2.h5! Kb3 3.Kf7+-; 1...Kb3 2.Kf7 Kc4 3.Kxg7! h5 4.Kg6 Kd5 5.Kxh5!; 4.Kg6 Kd5 5.Kxh5! Ke6 6.Kg6!+-) 2.Kf8! (2.Kf7? g5! 3.hxg5 h4 4.g6 h3 5.g7 h2 6.g8Q h1Q=) 2...g6 (2…g5 3.hxg5 h4 4.g6 h3 5.g7 h2 6.g8Q+ +-) 3.Ke7! g5 (3..Kb3 4.Kf6! Kc4 5.Kxg6! Kd5 6.Kxh5! Ke6 7.Kg6! Ke7 8.Kg7!+-) 4.hxg5 h4 5.g6 h3 6.g7 h2 7.g8Q+ +-.

22 1.Kh6(!) Kh8 2.g6 Kg8 3.g7 +-.

23 1.Kf3! Ke5 2.Ke3! (2...Kd5 3.Kf4+-) 2...Kf5 3.Kd4 1-0.

24 1.Kg6! Kb4 2.Kf5! Kc3 3.Ke4! 1-0.

25 1.Kd2? Ke7 Ke3 Kd6 3.Kd4 Kc6= 1.Kc2! Ke7 2.Kb3 Kd6 3.Ka4 Kc7 4.Ka5 Kb7 5.Kb5 1-0.

26 1.Kf6! Kf8 2.e6 Ke8 3.e7! Kd7 4.Kf7! 1-0.

27 1.Kf7! Kh8 2.Kg6 Kg8 3.Kh6!! Kh8 4.g6 Kg8 5.g7! 1-0.

28 1.Kf5! Ke3 2.Ke5! Kd3 3.Kd5! Kc3 4.Kc5! Kd3 5.a4 1-0.

29 1.Kg2! Kf7 2.Kf3! Ke6 3.Ke4! Kd6 4.Kd4! Kc6 5.Kc4! 1-0.

30 1.Kb3! Kc5 2.Kc3! Kd5 3.Kd3! Ke5 4.Ke3! Kf5 5.Kf3! Kg5 6.Kg3! Kf5 7.Kh4 Kg6 (7...Kf6 8.Kh5 Kg7 9.Kg5) 8.Kg4! Kf6 9.Kh5 Kg7 10.Kg5 Kh7 11.Kf6 Kh8 12.g4 Kg8 13.Kg6 Kh8 14.g5 Kg8 (compare Walker) 15.Kh6!! Kf7 16.g6+.

31 1.Ke2? Kd6 2.Ke3 Ke5=; 1.Kf2! Kd6 2.Kg3! Ke6 3.Kh4! (3.Kf4? Kf6!=) Kf6 4.Kh5! Kg7 (4…Kf7 5.Kh6!) 5.Kg5! Kh7 6.Kf6 Kg8 7.g5 (7...Kf8 8.g6) 7…Kh7 8.Kf7 Kh8 9.Kg6 Kg8 10.Kh6 Kh8 11.g6 1-0.

32 1.Ka4! Kc6 2.Ka5! Kb7 3.Kb5! Ka7 4.Kc6 Ka6 5.b5+ Ka7 6.Kc7! Ka8 7.Kb6 Kb8 8.Ka6!! Kc7 9.Ka7 1-0.

33 1.Kd2 Kc4 2.Ke3 Kd5 3.Kf4 Ke6 4.Kg5 Kf7 5.Kh6 Kg8 6.g4 Kh8 7.g5 Kg8 8.Kg6 Kh8 9.Kf7 Kh7 10.g6+ +-; or 1.Kd1 Kc3 2.Ke2! 1-0.

34 1.Kd2 (or 1.Kf2) 1…Kd8 2.Kd3 Kd7 3.Ke4 Ke6 4.e3 Kd6 5.Kf5 Kd5 6.e4+ Kd6 7.Kf6 Kd7 8.e5 Ke8 9.Ke6 Kd8 10.Kf7 Kd7 11.e6+ +-; 5…Ke7 6.Ke5! Kd7 7.Kf6 Kd6 8.e4 +-; 5…Kd7 6.Ke5 Ke7 7.e4 Kd8 8.Kd6 Ke8 9.e5 Kd8 10.e6 Ke8 11.e7 1-0.

41 White to move can't win. Black to move is in zugzwang and he can't prevent the occupation of a key square. So White wins in this case..

42 White to move has to take the close opposition with 1.Kh3!. The opposition will be shifted until the position wKc3 vs bKc5 is reached and then White wins. Black to move draws by 1…Kh4.

43 White to move wins after 1.f7! Kxf7 2.Kd7 and the horizontal opposition brings White forward. So he finaly reaches g6 decisively. Black to move loses as well in a similar way.

44 White to move wins with 1. f7! Kf7: 2.Kd7+- as with the capture on g6 he occupies a key square for his g5-pawn. Black to move loses in a similar way.

45 If White tries to hold his pawn, then he loses: 1.Kd2? c4! 2.Kd1 c3! -+. It is correct to sacrifice the pawn to defend the key squares then: 1.c4! Kc3 2.Kc1! Kd4 3.Kd2 (3.Kc2? loses after Kxc4) 3...Kxc4 4. Kc2! =.

46 1.Bb1! Kxb1 2.Kg3 Kc1 3.Kc3 Kd1 4.Kd3 Ke1 5.Ke3 Kf1 6.Kf3 Kg1 and now 7.Kg3 g6 8.Kf4 Kg2 9.Ke5 Kg3 1-0 or 7.Kg4 Kg2 8.g6! +- .

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