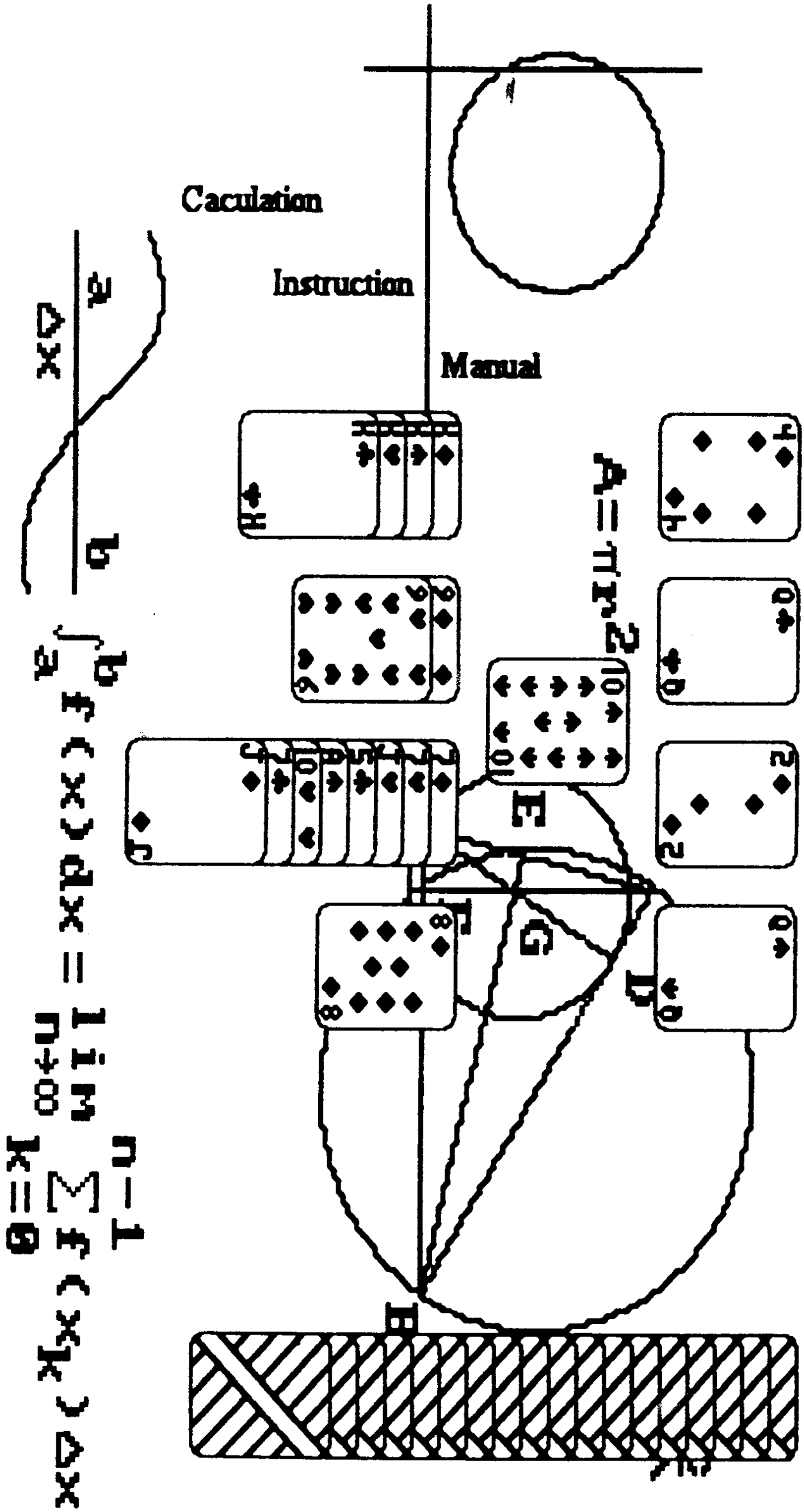
Caculation
Instruction
Manual
A = πr2
E
F
G
D
B
Δx
a
b
∫ab f(x)dx = lim n→∞ Σ k=0 n-1 f(xk)Δx

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Calculation Instruction Manual

Introduction

Thank you for purchasing Calculation; it is a decision you won't regret. If you have already seen the Calculation Demo, you're probably familiar with the game. But even so, take the time to glance at **Getting Started** and **The Advice Column**. If you haven't seen the demo, read the whole manual; a few minutes of reading might save you a lot of frustration. But most of all, don't be afraid to learn by trial and error. Calculation is a well designed game that won't go berserk; if it does, we want to hear about it. (The first person to report a reproducible bug gets two Unsane Creations products free.) Calculation is more than just another solitaire game; it's solitaire like you always wished it could be.

Getting Started

The Calculation Key Disk is a bootable disk with key disk protection. This means that if you make backup copies or to copy Calculation to your hard disk, you will be prompted put in the Calculation Key Disk before you can play.

When you open Calculation you will see two versions, Calculation and Calculation Strip. The Strip version is a 34K version that lacks a few options. It is designed to take up less memory so you can easily multitask, but is essentially the same. You will also see demos of other UnSane Creations products. Take the time to look at them and pass them on to your friends.

Calculation stores its scores and other information in a file called "Calculation Scores" in your S: directory. Among the other information stored in this file is the seed for the random number generator. Calculation changes this seed every time you quit. If you leave a game without quitting, you will play that same game the next time you play. If you use another disk to boot from, copy the scores to the S: directory of that disk or assign S: to the Calculation Key Disk. If you don't, you'll find that you're playing the same games over.

Standard Rules

For those of you experienced at playing different solitaire games, here is a

quick summary of the rules: The object of the game is stack the cards into four ordered stacks, one that counts by one, one by two, one by three, and one by four. The sequence for each stack looks like the following:

Stack 1 = A, 2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q, K
Stack 2 = 2, 4, 6, 8, 10, Q, A, 3, 5, 7, 9, J, K
Stack 3 = 3, 6, 9, Q, 2, 5, 8, J, A, 4, 7, 10, K
Stack 4 = 4, 8, Q, 3, 7, J, 2, 6, 10, A, 5, 9, K

Cards are dealt one at a time. A dealt card can either go on one of the stacks, if it fits, or on the top of one of the four discard piles. Only the top card of each of the discard piles can be moved to the stacks. For a more detailed explanation, read on.

The playing field is divided into four areas, see figure 1 below. The four stacks, the four discard piles, the card-in-play, and the undealt portion of the deck. The undealt cards are off to either side. When a card is newly dealt, it

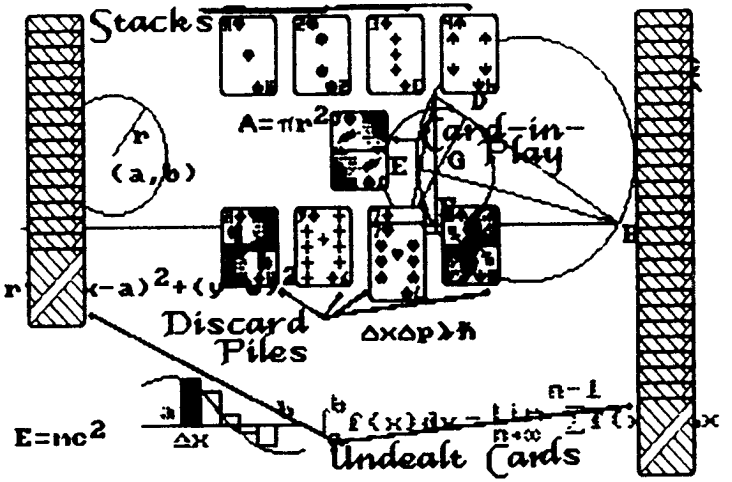

Figure 1

can either go on a stack or a discard pile. Once it is moved to a stack or discard pile another card is automatically dealt from the deck until all the cards are dealt. The four stacks are at the top middle of the screen and the four discard piles are underneath. The card-in-play is between the stacks and the discard piles, symbolic of the choice you must make to its fate.

As cards are dealt, you must put them either on the stacks or the discard piles. Cards can only be put on the stacks if they are in the proper order. This means that at any one time only four different cards can go up to the stacks.

For example, if the first stack, which counts by one, were to have a three showing, the only card that could go on that stack would be a four. Until you placed a four on that stack no other card could go there. And if a card can't fit on any of the four stacks, you must put it on one of the four discard piles. Let's say that the computer deals you a five. Let's ignore the other stacks for a moment and concentrate on the first one. Since you don't have a four and that's what the first stack needs, you can't put it on a stack. You put the five on a discard pile. The computer deals you a seven next. You can either put the seven on the five, in which case you won't be able to access the five until you moved the seven, since only the top card of each discard pile can be moved up to the stacks, or you could put it on another discard pile. You have to decide if getting a four is likely. If you get a four and you put the seven on another pile, you can put the four and then the five up to the first stack and be that much more ahead of the game. If you put the seven on the five and get a four, you will only be able to put the four up, but you might not cover another card you need in another discard pile with the seven. To make things simple you put the seven on another pile. And low and behold the computer deals you a four. You can now put the four on the first stack. The next card the stack needs is a five, which just happens to be at the top of one of the discard piles, so you can now put it on the four.

The strategy of this game is organizing the discard piles so you can stack the different stacks sequentially. If the cards come up in the right order, the game is easy. If they don't quite come up in the order you need, then it is all up to how you organize your discard piles. Only the top card of each discard pile can move up to the stacks, so including the newly dealt card you have a maximum of five cards that can move up to the stacks at any one time. As long as there are undealt cards, the next card you deal can change the game entirely. But when those cards are gone, winning is determined entirely by the cards you can move from the discard piles, in other words whether or not the cards you need are accessible. It may sound like an easy game, but it is one of the most challenging solitaire games around.

Variations

Calculation allows you to change its rules, giving you a total of two hundred fifty-six different variations. You can change Calculation's rules by selecting Change Rules under the **Edit** menu. When you do, you see the following options:

Number of discard piles: 3 *4* 5 6

Only top discard visible
All discards visible

Cards cannot be moved among discards
Cards may be moved to empty discards

Cards go on same color
Cards go on any suit

Undealt cards not visible
Undealt cards visible

Discard piles start empty
Kings start on discard piles

Stacks start empty
Stacks start with A, 2, 3, 4

The italicized options are the rules used in standard play. You can vary the game's difficulty by changing these options, making Calculation challenging for anyone, from the youngest novice to the oldest master.

The first set of options determines the number of discard piles. It is possible to have three, four, five, or six discard piles, although in standard play there are only four.

The second set of options affects the discard piles themselves. In a standard Calculation game you can only see the top card of the discard piles. But for those of us with poor memories who are too lazy to keep track of the discard piles on a separate piece of paper, there is this option. It makes every card on the discard piles visible. It is still only possible to move the top card of a discard pile, but now you can see what lies underneath.

The third set controls movement among discard piles. Normally once you place a card on a discard pile, it stays on that discard pile until you move it up to a stack or lose the game. But by changing this option, you can move a card from one discard pile onto another empty discard pile.

The fourth set restricts what cards can be placed on the stacks. Normally the only restriction on what cards can go to the stacks is numerical. In other words, if the card is a four and stack two needs a four, it fits. But there can be a further restriction. You can force it so that cards must also be the same color. In other words, two stacks would accept only hearts and diamonds and the other two only clubs and spades.

The fifth set affects undealt cards. Normally, the undealt cards are off to the side out of the way, effectively decoration. But this option allows you to see the

undealt cards. You can know what card will be dealt before it's dealt.

The six set determines how the discard piles start in the beginning of a game. Usually they start empty, but they can start with the Kings on them.

And finally, the seventh set of options similarly determine how the stacks start in the beginning of the game. Normally they start with the first card already on them, i.e. from left to right, the ace, two, three, and four respectively. But this option allows you to begin the game with empty stacks.

Menus

The **Project** menu contains four possible selections. About contains important information about Calculation. Take the time to look at this at least once. New Game, or the right Amiga-N key combination, starts a new game. Same Game, or right Amiga-S, permits those interested in tournament play to compete with the same game. It clears the Undo/Redo and Cheat buffers just as if it was a new game. And finally Quit, or right Amiga-Q, allows you to leave . When you quit, Calculation automatically saves your current position so when you play Calculation again, you will be exactly where you left off, even if you were in the middle of a game.

Under the **Edit** menu there are four more selections. Undo, or right Amiga-X, undoes a move. You can undo all the moves from the very end of a game to the very beginning. Redo, or right Amiga-R, redoes an undone move. Undo and Redo compliment each other and provide you with a powerful tool for solving Calculation. Reset Scores, resets Calculation's scores. For more information on how Calculation keeps score, see the **Scoring** section of this manual. The final option, Change Rules, permits the user to change Calculation's rules. For more information on this option, see the **Variations** section.

The final menu, the **Options** menu, contains seven options. The first, Help!, provides you with an online summary of the standard rules for Calculation. You can also get this summary by hitting the 'Help' key or the right Amiga-H key combination. This option is not included in the Strip version. The next, Slow Cards/ Quick Cards controls how cards are moved by the computer to the stacks. The cards can either move with blinding speed or stately decorum depending on your preference. The option in use is the opposite of what shows in the menu, which means that when the cards move with blinding speed, Slow Cards shows in the menu, and when the cards move with stately decorum, Quick Cards is visible. The next option, Cheat or right Amiga-C, offers you computer aid. Further information on this option is covered in the **Cheating** section. Background On/Off enables you to turn the background picture on or

off. Like the Slow Cards/Quick Cards option, the menu shows the option not in effect. This is another option not included in the Strip version. Sound On/Off allows you to switch the sound on or off. Normally Calculation tells you when you pick up a card, when you make a legal move, and when you make a illegal move with sound. If this becomes annoying, turn it off with Sound Off. Next Play On/Off signals the next legal move for each of the four stacks. When enabled there is a number to the left of each stack. This number indicates the next card you can put on that stack. And finally, Play Signal On/Off warns you when you're missing a legal move. If there is a legal move, either the card you just dealt or a card from one of the discard piles, and you deal another card without taking it, the computer will flash the screen to warn you of the mistake. But it will only provide this service to those who have enabled this helpful feature.

Cheating

There are two ways to cheat. One is to change the rules to make the game easier. The other is to use Cheat from the **Options** menu. For information on how cheating affects scoring, see the **Scoring** section.

Changing the rules is the easiest way to cheat. It is very easy to get into a situation where you think to yourself, "If I could only do this, I could win the game." Calculation permits you to do just that and win the game with Change Rules under the **Edit** menu. For more information on this option, see the **Variations** section.

But if changing the rules doesn't appeal to you, there is always Cheat in the **Options** menu. If you select this option, the computer begins to examine every possible move among the dealt cards. It will determine, given the time, whether or not it is possible to win the game from your current position. If it finds a way, it will make one move toward that goal. Selecting Cheat again will cause it to make another move toward the win. Cheat only makes you wait when it needs to think, which means that after its finished thinking, it will be spontaneous unless you've changed things significantly. If it isn't possible to win, it will tell you so. You can then Undo a few moves and try cheating again.

Cheat was not designed to solve games from the beginning. The sheer number of possible moves involved prohibits it. What it does is help you out of tight situations. If you get the point where you're stuck and can't decide what to do, run Cheat. Near the end of a game it usually gives you an answer relatively quickly. Take a break for a few minutes and Cheat will probably have an answer for you. If it doesn't have an answer by then, it's likely that there isn't a way to win from that position and Cheat is busy proving you can't win.

The proof often takes a long time. If you find you can't wait any longer, press the left mouse button. You will see a requestor with three options: Quit Cheating, Keep Working, and Save Work. Quit Cheating stops the computer and Keep Working restarts it. Save Work saves the information from the cheat buffer and quits the game. When you start Calculation again, you will begin cheating where you left off.

While the computer cheats you will see an illuminating new pointer. This pointer gives you information on how the cheat is progressing. The search progresses in a tree of all the possible moves from your current position. The light rays on the pointer change when the search moves down another branch. If the light rays don't change, it means that the search is progressing down the same branch and that means that you are probably close to a solution. It's up to you to decide how long to wait. Some solutions, especially those with fewer cards showing, occur almost immediately while others can take days or weeks or years.

Scoring

The computer keeps a number of statistics: games won in a row, games won, games lost, percentage won, longest winning streak, and longest losing streak. And it keeps track of each of these statistics for each possible game variation. If you use Cheat you will get a warning saying that if you continue the game will count as a loss. Likewise if you Change Rules in the middle of a game you will also get a warning; the computer assumes that you're making them easier. In both cases, it will record a loss for the game you're playing to the rules you started with. The only time you won't receive these messages when you begin to cheat is if you are replaying a game you've already won or lost; you've been accorded a win or a loss, so it doesn't matter. You can change certain rules in the middle of a game and not affect your score. The number of discard piles and how the discard piles and stacks begin a game can't be changed until the next game, so they don't affect the score of the game you're playing. And finally, you can reset these scores by using the Reset Scores option under the Edit menu.

The Advice Column

1. Don't start with the standard rules. Start simply and make Calculation fun as well as challenging. Some good rules to change are 'number of discard piles: 6', 'all discards visible', and 'kings start on discard piles.' If the game is still

too hard, change a few more rules. The point is to learn to play Calculation without getting frustrated. After all, aren't games supposed to be fun?

2. Keep a card by your side of the following:

A	2	3	4	5	6	7	8	9	10	J	Q	K
2	4	6	8	10	Q	A	3	5	7	9	J	K
3	6	9	Q	2	5	8	J	A	4	7	10	K
4	8	Q	3	7	J	2	6	10	A	5	9	K

If you are too lazy to make a card, hit the help key.

3. Leave one discard pile free to accept kings. Don't put any other cards on this pile until you have all four kings there. Kings are the last card to be put on each of the stacks, which means that any cards under a king are effectively useless until the end of the game. If you happen to need those cards to win you're out of luck. The quickest way to insure you'll never win a game is to put a king or two on a card that you need.

4. Always work first from the discard piles. If the computer deals you a card you need, first check the discard piles. If the card you need is also on a discard pile use it. This way you free the card underneath. You might find that you need that one also. If you don't need it you can always place the newly dealt card on top and return things to way they were before.

5. Try to build sequences in the discard piles. For example, place the four on the five and the three on the four. Then when you need the three for the first stack, you also get the four and the five. But remember, don't build sequences you will never use. Don't put the three and four on the five if the first stack is already up to the seven.

6. Try not to cover cards you will be using soon. If you will be using the queen soon, try to keep it at the top of a discard pile. If you cover it, you won't be able to get to it, and getting to it quickly may force you to cover other cards you need.

7. Don't make impossible sequences. Don't put a queen on the only remaining jack in the game or all the kings on a four. It only takes one impossible sequence will lose the game.

8. Use Undo. Use it when you're in trouble. Use it when you make a mistake. But use it, even if you have to Undo to the start of a game. Undoing is not cheating. You can always Redo an undone move.

9. If, in time, Calculation becomes too easy, make it harder. The ability to change Calculation's rules not only provides you with the means to make Calculation easier, but it also allows you to make it harder. Calculation can be made trivially easy or virtually impossible. It's up to you.

10. And finally, like many other prominent psychologists, astrologists, and

Advice Columnists, I may not have the slightest idea what I am talking about. Use your own judgement.

Rumors

Steve, Calculation's programmer, has been known to complain adamantly about the **Rumors** section of UnSane Creation's manuals. Some rumors have him pegged as an alien from another planet, some as a two headed Elvis clone, and even one as a descendant of a rabbit-like creature. But he has always been a firm believer in the freedom of the press, and when that fails he can always be mollified with a carrot. If you wish to speak to Steve, about Calculation, the current UnSane rumors, or anything else for that matter, feel free to contact him at (314) 892-5367 or write to him c/o:

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Credits

Manual
David Tolbert

Program
Steve Francis

Cards
Rovena Kessinger