
DICECULUS
$-\frac{df}{e} = ?$
ЗАЛГЕБРА
$2a + bc = ?$




ЗАЛГЕБРА

Luck, skills, strategy, diversion, foreseeing...
Can I combine them all? Can I add more qualities?!

What If today I have bad luck, can I take the best of it and point it towards someone else? I'm not in a good shape, I've forgotten some good strategies... I will distract them to luck out. I could make a proposal that would turn the scales in my favor. I can win the game by losing it...do the others acknowledge that?! Numbers (figures) are all around us and within us as well!
DiceCulus is an entertaining and fun game, which combines knowledge and luck. It will give you the opportunity to develop different strategies and to add up new challenges. It is a mathematical game which allows everyone who does not understand math to win! With just a few games your counting skills will evolve. It is played with dice in several stages. Each stage is different from the others and it has several rounds. You will have the chance to gain points, to steal points and to give away points. This is the pathway towards winning the game! The game consists tables on which the players write assumptions, math problems and solutions. For each stage there is a deck of cards, consisting of a equations or identities, which you could easily solve with the help of the dice. You will be able to play the basic game or add challenges, to help you make the game more interesting, and even to choose the way to name the winner.

Educational and fun, this is a game fit for young and old!




DICECULUS

The game is played by 7 dice in 4 rounds, with two or more players. Each circle has a certain number of cards, colored differently. Each card contains 1 equation, (identity – for the fourth stage).

I stage –THE IDEA– linear system with three variables – blue cards – 50 equations;
II stage – THE GAME – linear system with three, four or five variables – yellow cards – 80 equations;
III stage – THE ROBBERY – linear system with five or six variables – red cards – 40 equations;
IV stage – CHARITY – identities with three, four, five and six variables – green cards – 40 identities.

The game could be long or short, according to the number of rounds in each stage.

For the LONG game the rounds are:
1st stage – 5 rounds
2nd stage – 8 rounds
3rd stage – 4 rounds
4th stage – 4 rounds

For the SHORT game the rounds are:
1st stage – 3 rounds
2nd stage – 4 rounds
3rd stage – 2 rounds
4th stage – 2 rounds

Before the beginning of the game, each player receives a table in which he should write down his results from the separate rounds. Each player has an invigilator, who sits on his left side. The invigilator checks the player's points when he decides it is necessary. The first player to start is chosen randomly, as well as the turn of the next player (clockwise or anticlockwise). The blue cards for the first stage, have been prepared, they are shuffled and the player whose turn it is, takes the upper card form the deck. The players take turn in the agreed direction. The other three decks are left aside, until the first round has finished and are used accordingly for the second, the third and the fourth stage .
The players have to choose if they are going to play the Basic game, as well as to add complications (Challenges) to it by defining the rules before starting.

For every stage the points are rounded to indeger 0.5 equals 1; less than 0.5 equals 0.

Let's play!

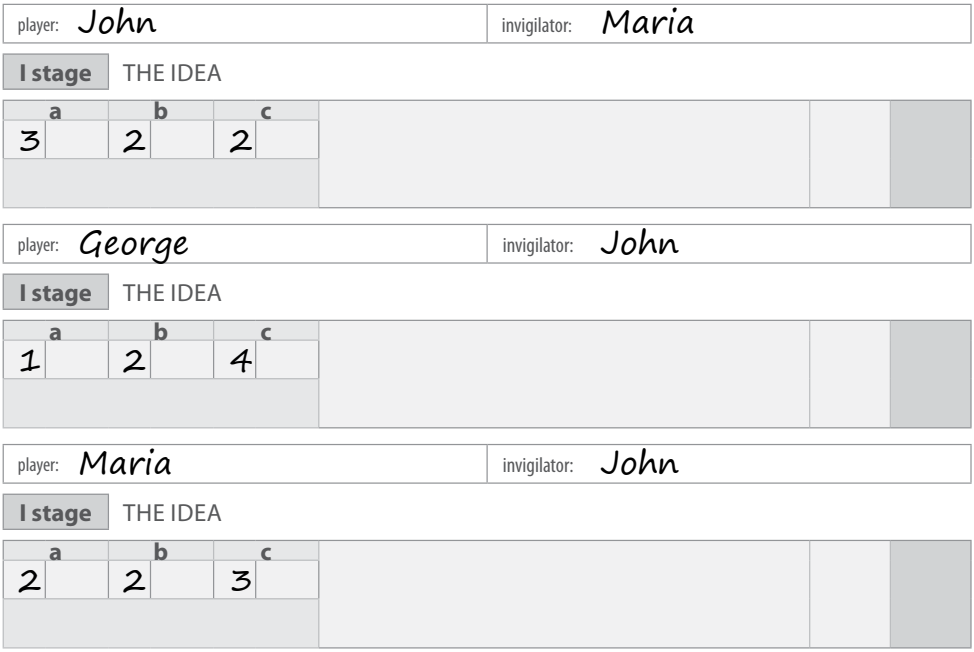
BASIC GAME:

I stage –THE IDEA

There are 50 equations with three variables "a", "b", "c", in the first stage. Before starting the game, the players divide their seven dice for "a", "b" and "c". After all the players have written their assumptions in their tables, they announce them by the turn, they have chosen before the beginning of the game (clockwise or anticlockwise). The number of the divided dice must always be 7!

Example 1:

John writes in his table that for "a", he will roll 3 dice, for "b" - 2 dice and for "c" - 2 dice. George writes in his table: for "a" 1 dice, for "b" - 2 dice and for "c" 4 dice. Maria writes for "a" - 2 dice, for "b" 2 dice and for "c" 3 dice. Then all of them announce their suggestions – first John, than George, finally Maria.



After they are all ready, the player whose turn is it, picks an equation card from the deck (for the first round – the blue cards deck), which the players write down in their tables. The first player rolls the dice according to his suggestion. For each unknown variable (letter) he can roll the dice three times, as every time he rolls all of the dice points for this unknown variable (letter). For every roll he gets to choose either to write down the sum or to roll the dice again. The third roll is the final one, so the sum must be written down in the table. The player does not have the right to write down the sum of the previous roll after he had rolled the dice again! He must always put down the last sum. After the first unknown variable is clear, the players continue to the next one.

NOTE: Everyone has the right to choose which variable to play first. You can start with "b", than "c", or first "a" etc. This can be decided just before each roll of the dice for each variable (letter).
When the player discovers all the variables, he solves the equation and puts down his result for the round. After the last player has solved the equation, the round has finished. All the other rounds are played in the exact same way. In the next round first is the player whose turn is it.

Example 2:
John gets the equation "ac-7b=". He decides to roll the dice for "b". He's got two dice. After the first roll their sum is "10", he rolls second time and the sum is "6". He chooses to write the second result, so the rolling for "b" is completed. Than he rolls 3 dice for "a" and gets the sum of "9", than he rolls again – the result is 5, finally he decides to roll for third time and gets "5". Now he must write the third result in his table (e.g. "5"). Last, he rolls for "c" with two dice – the sum is "10" - he writes it down. Now his equation looks like this:"5.10-7.6=50-42=8" "8" is his final result for that round. Next is George, than Maria. They both have to solve the same equation with their distribution of the dice. After everyone is ready, they put down their solutions for the end of the round.

player: John						invigilator: Maria		
I stage	THE IDEA							
a		b		c				
3	5	2	6	2	10	ac-7b= 5.10 – 7.6 = 50 – 42 = 8	8	8

II stage –THE GAME
The second stage consists of 80 equations with three, four and five unknown variables - "a", "b", "c", "d" or "e". The procedure in this stage of the game is the same as the previous one, except that when the players divide their dice, they have to make an assumption about the number of the unknown variables in the equation – one, two, three, four or five, and in accordance with this assumption to divide their seven dice. Afterwards they announce it. Finally the equation is picked.

If a player has assumed an equation with more unknown variables than the chosen one, his dice for the extra letters fall out. If a players has assumed an equation with fewer variables than the chosen one, he automatically receives 0 for the missing variables.

Example 3:

It's Maria's turn. She bet on an equation with 3 unknown variables and divided her dice accordingly for "a" 2 dice, for "b" 4 dice and for "c" 1 dice. Next is John with a bet on 5 variables equation – 1 dice for "a", 1 dice for "b", 2 dice for "c", 2 dice for "d" and 1 dice for "e". Third is George with the assumption of four unknown variables equation and the dice – for "a" 2 dice, for "b" 2 dice, for "c" 2 dice and 1 dice for "d".

Maria draws from the equation "–a+b+c-7d=", rolls her dice, according to the way she distributed them for "ä", "b", "c" and for "d" she puts down "0 "in her table. John rolls the dice, according to the way he distributed them for "ä", "b", "c" and "d", but the dice dedicated for "e" drops from his turn for this round, affectively John throws total amount of 6 dices this round. George guessed and he is supposed to roll the dice the way he distributed them. Rounds are repeated until the end of the stage.

player: Maria		invigilator: George	
I stage	THE IDEA		
II stage	THE GAME	GRAND TOTAL – I stage:	7

a	b	c		
2	4	1	a+b+c–7d=	
d	e			
– 0	–			

player: John		invigilator: Maria	
I stage	THE IDEA		
II stage	THE GAME	GRAND TOTAL – I stage:	4

a	b	c		
1	1	2	a+b+c–7d=	
d	e			
2	1 –			

player: George		invigilator: John	
I stage	THE IDEA		
II stage	THE GAME	GRAND TOTAL – I stage:	6

a	b	c		
2	2	2	a+b+c–7d=	
d	e			
1				

NOTE: When a player's task has no real solution (ex. A player has to divide by "0"), he/she scores unfavorable points "-50" for the round, which will lead to end of the turn.

Stage III – ROBBERY

Into the 3rd stage the players steal points from each other.

The Stage contains 40 equations with five and six unknowns - -„a“, „b“, „c“, „d“, „e“ and „f“.

Into the 3rd stage the same rules as in stage II apply – all the players should guess the number of the unknowns (five or six) and they distribute dice based on that assumption. By taking turns, all players announce their guesses and they announce from whom they will steal points from. This means that in the end of the turn their scored points should be marked in the tables as a result and chosen "victim player" scores reversed (minus) points. In case players have made unfavorable points – they write unfavorable score to themselves and positive for the opponent.

NOTE: Each player is able to steal points by whom he asked for, even if this person is chosen more than once.

Example 4:

Maria said that she will rob George and in the end of the round scores 35 points. She scores "+35" points as a result and George writes "-35" in his table. John from his end, chose to rob Maria. He scores "-10" at the end of the round, he deducts the amount from his score, and Maria adds this to her score. George from his end, chose to rob Maria. He scores "23" at the end of the round. He scores "+23" points as a result and Maria writes "-23" in her table.

The rounds are repeated until the end of the stage.

player: Maria			invigilator: George			
III stage THE ROBBERY			GRAND TOTAL – II stage: 5			
a	b	c	steal points from: George	35		
			... = 35	10	22	27
d	e	f		-23		

player: John			invigilator: Maria			
III stage THE ROBBERY			GRAND TOTAL – II stage: 5			
a	b	c	steal points from: Maria	-10		
			... = -10		-10	-5
d	e	f				

player: George			invigilator: John			
III stage THE ROBBERY			GRAND TOTAL – II stage: 5			
a	b	c	steal points from: Maria	23		
			... = 23	-35	-12	-7
d	e	f				

STAGE IV: Charity

The 4th stage is made of 40 identities with 3,4,5 or 6 unknowns - „a“, „b“, „c“, „d“, „e“ and „f“. The solution of one is built on all the points from the round. Into the 4th stage same rules apply similarly to previous ones – all the players should guess the number of the unknowns (3, 4, 5 or 6) and they distribute dice based on that. When the players announce their guesses, each one should chose a single or more players to whom he/she will donate his own points. Bear in mind that there are no limits to the number of players, who will receive the donation (one, two, three and etc.), however points must be spread equally between all of the chosen people. The player spreads his points among the chose and writes "0" for himself.

NOTE: However each player should have received points as charity by the end of the round. The last one in line should take into account when he/she is choosing if there is anyone left without a donor. If by any chance there is such person he/she should be the chosen one, (also this applies if there are more than one player without a donor).

NOTE: Points should be spread with the sign received, for example if a player received a donation "-50", he/she should spread it with "–"sign.

Exception: If the problem is solved in the process itself for task "g" and the task still has a decision, that is to say, it is not divisible to "0", the player automatically writes a score of 50 points without the need to roll a dice.

END GAME SCORE:

SCORE FROM THE ROUND:

In the **FIRST** and **SECOND** stages are obtained the points scored during resolving the equation, positive or unfavorable points.

In the **THIRD** stage are obtained the points, scored by collecting the points from solving the equation and those robbed from the rest of the players (if any).The result may be positive or negative, once again.

During the **FOURTH** stage the result is made of the sum of points that the player has received as charity - positive or negative points.

TOTAL SUM:

We receive The Grand Total when we sum results from the current round and the prior one from the same stage. The following results of the rounds we add up to the moment TOTAL SUM.

At the beginning of the game during the resolution of the first equation, THE ROUND SCORE is equal to the TOTAL SUM. To the score of the current round, while resolving the second equation, we add TOTAL SUM until this very moment (1st round's score in this case) and we receive the new TOTAL SUM. We add TOTAL SUM until this very moment to the each new round score, this repeats until the end of the stage. At the end of the stage from the overall sum we make GRAND TOTAL.

GRAND TOTAL:

The GRAND TOTAL on each stage is made of the sum of all numbers from the TOTAL SUM. During each new stage GRAND TOTAL is considered the TOTAL SUM until this very moment and it is added to the RESULT from round I of the stage. That way we receive the new TOTAL SUM.

END GAME SCORE:

We receive the END GAME SCORE when we sum the GRAND TOTALS from the four rounds.

Example 5:

John solved his first equation and scores 54 points during beginning of the FIRST STAGE. He put in his table 54 in the ROUND SCORE field, and in the TOTAL SUM field. He won 25 points during second round. He puts 25 in the ROUND SCORE field, and TOTAL SUM receives by adding his most recent points – 53+15=79. And his sum becomes 79 points in total. During third round he has "-17 points", which means that his ROUND RESULT and TOTAL SUM so far are "79+ (-17)= 5 points"...

After he has played all rounds from first stage, he should have TOTAL SUM of "184 points. Now to receive TOTAL SUM for the stage, he should sum the numbers from the TOTAL SUM (183 points) - "1+8+3= 12". So his TOTAL SUM for the 1st stage is "12 points".

In the begging of the second stage, he resolves the equation and scores a RESULT from FIRST ROUND "36 points". His GRAND TOTAL so far is made of the current round result and we add the TOTAL SUM of the previous stage – "12 + 36 = 48". The solution of the next equation brings him "2 points". His TOTAL RESULT becomes – "48+2 = 50 points".

After all rounds are done, John has TOTAL SUM: 202 points. His GRAND TOTAL for second stage is "2+0+2= 4".

John is solved his first equation and scored "320 points" during the 3rd round, at the same time Maria has stolen from him "-111 points". His score for the round is as it follows "320 + (-111)= 209". We add to this result his GRAND TOTAL from the second round and we have "213 points" total result up to this point. After the end of all rounds his TOTAL SUM for the third stage is "-11 points". His TOTAL SUM for the third stage becomes „-(1+1)= -2 points".

At the beginning of the 4th stage of the first round, he has two donors. George gave him "18 points" and Maria "103". His SCORE for the ROUND is "18+103= 121 points". Next to this result he add the TOTAL SUM from the 3rd stage and receives „121+(-2)= 119 points". Total sum: at the end of this stage, after all of the rounds have been played, he has a TOTAL SUM "253"points.
His END GAME SCORE John receives from the sum of his TOTAL SUMS from the four stages - „12+4+ (-2)+10 = 24 points".

THE WINNER IS THE ONE WITH THE HIGHEST END GAME SCORE.

There could be additional points added for each equation solved without additional help as a complementary condition (primarily for children).

CHALLENGES:
You may add one or more challenges to the core game, prior the start of the game, in order for the game to be more intrigue and entertaining.

– The players may swap the standard dice with the "seven wall dice" included in the material pack. That way they will receive bigger values, harder for calculation and furthermore, bigger results.
– Players may deprive a point of each participant for a wrong solution of an equation, but only when the mistake is discovered by the invigilator of the relevant player.
– GRAND TOTAL for each stage may be received by the sum of all figures from the TOTAL SUM until one digit number or when we multiply all figures from the TOTAL SUM.
– END GAME SCRE may be received by one of the following versions:

1. The TOTAL SUMS at all stages are subtracted.
2. The TOTAL SUMS at all stages are multiplied.
3. The TOTAL SUMS at all stages are divided.
4. Different actions ("+";"-";"X";"/") can be defined between total results.

–The winner may be the player with the lowest score or the one whose score is with less dividers etc.
– The players have the opportunity to make the game more difficult, up to a level they wish, if they use whatever mathematical means they want (rooting, logarithms, trigonometry…) for calculation of the TOTAL and END GAME SCORE.

Team Efficiency wishes you to have a good game! Don't forget numbers are all around us and within us as well!

DICECULUS




CONTENT:

1. Quick and brief hinting directions.
2. Core or basic directions, where is described how the main game is to be played and what additions it has to make it more challenging.
3. One Dice Cup
4. 7 Dice
5. 50 tables for long and short play
6. Four decks (total of 210 cards)







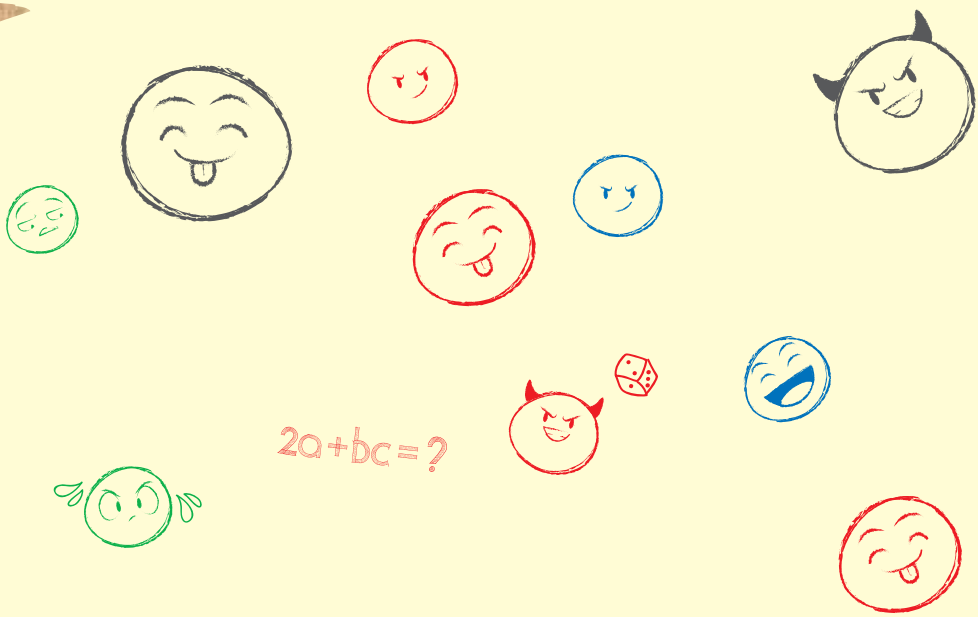


$2a+bc=?$

$3\frac{bc}{a}-\frac{df}{e}=?$

$2a+bc=?$

ЗАЛГЕБРА



Made in Bulgaria by Efficiency Creative
5 Han Krum Str., 7000 Ruse, Bulgaria
e-mail: craft@efficiency.bg. **www.efficiency.bg**