

# Basic MathDice Rules

## Equipment

MathDice is played with two 12-sided dice, and three 6-sided dice. Optionally, an electronic timer or watch with a second hand can also be used.

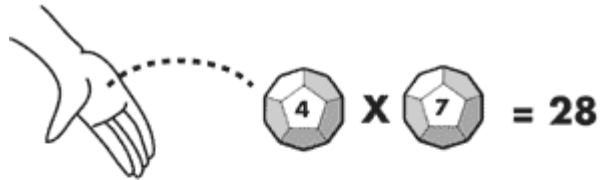
## Playing the Game

In basic MathDice, two players compete against each other. (The game can also be played by three or more players, or by teams of players, with a slight adjustment to the scoring rules.) The rules below describe the basic two-player game.

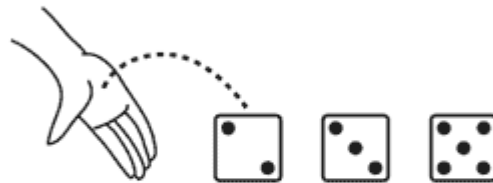
Players roll the dice as described below; winning a roll of the dice earns a player one point. Play continues until one player has won four points, or the "best of seven" points. In the short play version of MathDice, the first player to reach four points wins the match. In the long play version, the first player to four points wins a "set"; a player wins the match by winning two out of three sets.

## Playing a Point

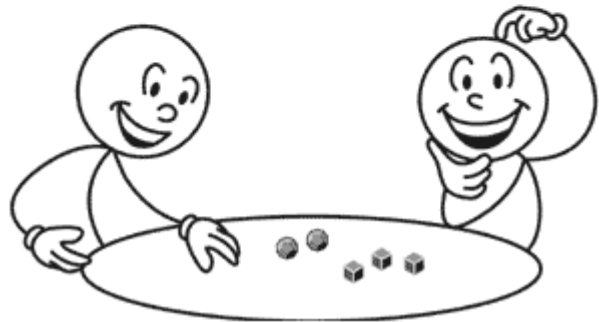
1) To start, one player rolls the two 12-sided dice. A "Target Number" is then established as the result of multiplying these two numbers together.



2) After the Target Number has been established, the other player rolls the three 6-sided "Scoring" dice. Using each of the numbers on the dice once and only once, and combining them using any combination of addition, subtraction, multiplication, division, and/or powers, players attempt to calculate a result that comes as close as possible to the target. In the case of powers, you must use one or more of the scoring numbers to get your exponent.



3) Once a player has calculated a number, she calls it out. The other player then tries to find a closer number. Players go back and forth until one player either hits the target exactly or the other player cannot find a closer number.



4) The player who calculates the closest number wins the point. The winning result may be above the Target Number, below the Target Number, or may hit it exactly.

Player 1 shouts, "25!  $(2+3) \times 5$ "  
Player 2 shouts, "30!  $2 \times 3 \times 5$ "  
Player 1 shouts, "29!  $2^5 - 3$ "  
Player 2 shouts, "28!  $5^2 + 3$ ," hits the Target Number exactly, and wins the point.

# Official Tournament Rules

- The Target Number must be established and agreed on before the Scoring Dice are rolled. The Scoring Dice must be rolled so that they are immediately and equally visible to each player.
- Each player is free to call out a number that he believes is the closest one to the target – which can include hitting the target exactly. The first player to call out a number establishes the baseline Scoring Number. Players are given up to 30 seconds for someone to call out a baseline Scoring Number; if no one calls out a number, the round is a draw and players roll again.
- Once a player calls out a number that she thinks is closest, she may not answer again until the other player has had a chance to improve on this calculation. If the first player calls out another number before the second player has called out anything, this second number does not count for the player who called it. Moreover, the other player may call that number for himself, if he can make a correct equation using the Scoring Numbers.
- The maximum time allowed for either player to improve on the Scoring Number is 20 seconds. In cases where a referee is present, the referee has the last word on timing.
- This process goes back and forth until one player hits the Target Number, or a player cannot improve on the previous closest Scoring Number. At that time, the player with the closest answer must state her calculation to her opponent and the referee. A correct calculation gains a point; if the player can't offer a calculation for her answer or offers an incorrect calculation, the other player wins the point.
- If both players call out the same number at the same time, the game continues. Each player has an additional 20 seconds to come up with a closer answer. If neither player has a closer answer (or if players got the target number on the first try), a tie is declared and players roll again. Neither player gets a point.
- A player's target number must always BEAT his opponent's number. Calling out a number that is the same distance from the target number as the opponent's scoring number doesn't count. For example, if the target is "25" and the first player answers "30," an answer of "20" would not suffice, since both answers are five away from "25."
- Scratch paper is not allowed. All calculations must be done mentally.
- Fractions are permitted, and they often provide the closest solution. If the target is "7," one player has "6" and the other player has "7 ½," then 7 ½ is the winner.
- Players may answer in the form of a fraction. Example: If the target number is "4," an answer of "(4+3)/2" is perfectly valid and would beat an answer of "3."