

Problem of the Week

Problem B

Don't Get Vexed by the Wrong Vertex!

A standard six-sided die has its faces marked with the numbers 1, 2, 3, 4, 5, and 6. The die is “fair” and each number is used exactly once. When a mathematician says a die is “fair”, they mean that on any roll there is an equally likely chance of landing on any face of the die.

A game board is made up of fourteen hexagons, as shown in the diagram below. The numbers on the hexagons are arranged randomly. You may place your game piece on any vertex shared by three hexagons. Two standard six-sided dice are then rolled and the two top numbers are added together. If this sum is equal to the number on any of the three hexagons sharing the vertex where your game piece is placed, you win the roll.

Which vertices give the best chances to win the roll? Explain your reasoning.

