IT'S OLNEY MATH

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Samanvi and her older brother Kiruthik enjoy the weekly Olney Farmer's Market. Samanvi takes a big jar of coins with her, containing lots of pennies, nickels, dimes and quarters. One Sunday, she sets her sight on a container of dark chocolate almond bark at Cupcakes Lounge. She asks her brother for help, and since he knows she loves dark chocolate, he gives her all the money he has in his pocket ($5.35), sixty-five cents short of the $6 she needs. Assuming the coins in her jar allow for every possible way to come up with the $0.65, what is that number of ways? (For instance, if it were just 10 cents the answer would be four; that is, (1) ten pennies; (2) one dime; (3) two nickels; (4) one nickel and five pennies).

There is a prize available to the first student from fifth to eighth grade who provides the correct answer. Anyone not in fifth to eighth grade can still work on this puzzle for their own curiosity or for fun.

This problem shows that counting can be more than just $1, 2, 3, \ldots$. We humans love to count things, such as the number of ways to schedule a round-robin tournament for a set of sports teams, or the number of necklace designs using beads of two (or more) colors. The study of how to count things is called Combinatorics.