

Answer on Question #83046 – Math – Statistics and Probability

Question

Q22.

Ella has these coins. 20p, 10p, 10p, 1p, 1p.

Jayden has these coins. 10p, 10p, 2p.

Ella takes one of her coins at random and gives it to Jayden.

Jayden adds it to his coins.

Then Jayden takes one of his coins at random and gives it to Ella.

What is the probability that Ella and Jayden now have the same amount of money as each other?

You must show your working.

Solution

They both have 64p in sum.

To have same amount of money, each of them must have 32p.

The only way is: Ella must give Jayden 20p (probability $\frac{1}{5}$) and then Jayden must give Ella 10p (probability $\frac{2}{4}$).

Multiplying these probabilities we have:

$$P = \frac{1}{5} \cdot \frac{2}{4} = \frac{1}{10}$$

Answer: $\frac{1}{10}$.