

The Missing Dollar Problem

The Setup:

I borrowed \$50 from mum and \$50 from dad to buy a bag costing \$97. After the purchase, I had \$3 left. I returned \$1 to dad and \$1 to mom, and reserved \$1 for myself. I now owe $\$49 + \$49 = \$98$ plus the \$1 I reserved for myself, which is \$99. Where is the missing \$1?

The Explanation:

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Everything is perfect here, nothing is missing. It is just wrong calculation. As you returned \$2 to your parents, you actually borrowed and used \$98. In the question you are summing up the debt (\$98) with your saving (\$1) forgetting the fact that your saving (\$1) itself is from your debt (\$98) [i.e, debt amount $\$98 = \text{shirt} - \$97 + \text{your savings} - \1]

A CLEAR PICTURE:

Before purchase you had: \$100 (which you borrowed from your parents \$50+\$50)

And after purchase you are with: \$97(shirt) + \$3 (change)

After returning \$1 to Dad and \$1 to Mom you have: \$97 (shirt) + \$1(saving)

Finally,

$\$100 = \$97(\text{shirt}) + \$1 (\text{your saving}) + \$2 (\text{which you returned to your parents})$

Conclusion to the question: Before purchase \$100 was with you, and after purchase $\$97 + \$1 = \$98$ is with you and \$2 is with your parents.