

MATHCOUNTS[®] Problem of the Week Archive

Summer Funds – June 25, 2018

Problems & Solutions

Fiona has two part-time jobs during her summer vacation. She works part-time as a counselor at a local day camp, and she has another part-time job as a life-guard at the community swimming pool. Fiona works a combined total of 40 hours every week between the two jobs.

The first week working both jobs it rained all but one day, so three-fourths of the hours she worked that week were at the day camp. How many hours did Fiona work at the pool the first week?

If three-fourths of the hours Fiona worked were at the day camp, it follows that she spent the other $1 - 3/4 = 1/4$ of the hours working at the pool. That means the number of hours Fiona worked at the pool the first week was $40 \times 1/4 = 10$ hours.

The second week, the number of hours Fiona worked at the day camp was $3/5$ the number of hours she worked at the swimming pool. What is the absolute difference in the number of hours Fiona worked at the day camp and the number hours she worked at the pool during the second week?

If we let d represent the number of hours Fiona worked at the day camp, and let p represent the number of hours she worked at the pool, we have $d = (3/5)p$. We also know that Fiona works 40 hours every week, so, $d + p = 40$. If we substitute $(3/5)p$ for d in this equation, we get $(3/5)p + p = 40$. Solving for p , we see that the number of hours that Fiona worked at the pool the second week was $(8/5)p = 40 \rightarrow p = 5/8 \times 40 = 25$ hours. It follows that Fiona worked $40 - 25 = 15$ hours at the day camp that week. The absolute difference in the number of hours Fiona worked at the day camp and the number of hours she worked at the pool the second week is $25 - 15 = 10$ hours.

Fiona earns \$10 per hour as a camp counselor and \$15 per hour as a life guard. What is the absolute difference in the amount Fiona earned the first week and the amount she earned the second week?

From the first problem, we know that Fiona worked at the pool 10 hours during the first week, which means she worked at the day camp $40 - 10 = 30$ hours. The total amount Fiona earns each week can be determined using the expression $10d + 15p$, where d is the number of hours she works at the day camp, and p is the number of hours she works at the pool. So, the first week Fiona earned $10 \times 30 + 15 \times 10 = 300 + 150 = 450$ dollars. From the second problem, we know that Fiona worked 15 hours at the day camp and 25 hours at the pool during the second week. So, the second week she earned $10 \times 15 + 15 \times 25 = 150 + 375 = 525$ dollars. The absolute difference in the amount Fiona earned the first two weeks is $525 - 450 = 75$ dollars.

MATHCOUNTS[®] Problem of the Week Archive

Summer Funds – June 25, 2018

Problems

Fiona has two part-time jobs during her summer vacation. She works part-time as a counselor at a local day camp, and she has another part-time job as a life-guard at the community swimming pool. Fiona works a combined total of 40 hours every week between the two jobs.

The first week working both jobs it rained all but one day, so three-fourths of the hours she worked that week were at the day camp. How many hours did Fiona work at the pool the first week?

The second week, the number of hours Fiona worked at the day camp was $\frac{3}{5}$ the number of hours she worked at the swimming pool. What is the absolute difference in the number of hours Fiona worked at the day camp and the number hours she worked at the pool during the second week?

Fiona earns \$10 per hour as a camp counselor and \$15 per hour as a life guard. What is the absolute difference in the amount Fiona earned the first week and the amount she earned the second week?