

MATHCOUNTS 2012-2013 HB Poster Problem

The ratio of yellow, red and purple snacks in the bag is 10:3:1. If there are 549 red snacks, how many are **not** red?

Solution

We are told there are 549 red snacks. Since the ratio of red snacks to purple snacks is 3:1, we can set up the proportion $3/1 = 549/p$, where p is the number of purple snacks. Cross-multiplying and solving for p , we see that there are $3p = 1 \times 549 \rightarrow 3p = 549 \rightarrow p = 183$ purple snacks. We also know that the ratio of yellow snacks to purple snacks is 10:1. In other words, there are 10 times as many yellow snacks as there are purple snacks. That means there are $183 \times 10 = 1830$ yellow snacks. So, $183 + 1830 = \mathbf{2013}$ snacks are not red.