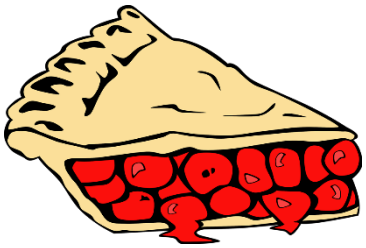
MATHCOUNTS® Problem of the Week Archive

National Pie Day – January 24, 2022

Problems



Per the American Pie Council, January 23 is National Pie Day! This is not to be confused with Pi Day, which celebrates mathematical symbol π. National Pie Day is a celebration of a beloved tasty treat. The American Pie Council encourages celebration by hosting pie parties and indulging in a slice of pie. We will celebrate with some pie-themed problems!

Warren is throwing a pie party for his entire school to celebrate the occasion. He figures out that to feed all his guests and have a good variety of pie flavors, he should make 15 pies. The recipe he is using calls for 2¼ cups of flour per pie crust. He only has 1 cup of flour in his kitchen, so he will need to buy more. Flour is sold in 5-pound bags. To figure out how many bags of flour he needs to buy, he weighs the 1 cup of flour he has. The 1 cup weighs 4.8 ounces. To make all 15 pies, how many bags of flour does Warren need to buy?

*To make all the pies, Warren needs a total of 15 × 2 ¼ = 33 ¾ cups of flour. He already has 1 cup so he needs to purchase 33 ¾ – 1 = 32 ¾ cups. One cup is 4.8 ounces, so the amount of flour he needs to purchase will weigh 32 ¾ × 4.8 = 157.2 ounces or 157.2 ÷ 16 = 9.825 pounds. Since flour is sold in 5-pound bags, Warren must buy **2** bags.*

Warren asks all his guests what their favorite type of pie is and tallies all the answers. The responses are shown in this table. If he uses the ratios of his guests' responses to determine which flavors each of his 15 pies will be, how many cherry pies should he make?

Type of Pie	Number of Favorites
Apple	63
Cherry	18
Blueberry	18
Pecan	9
Blackberry	27

*The total number of responses is 63 + 18 + 18 + 9 + 27 = 135. The ratio of cherry pie responses to total responses is 18/135 = 2/15. Since Warren will make 15 pies, then, per the ratio, he should make **2** cherry pies.*

Using the table in the previous problem, Warren tallies up the total number of guests who will attend. He wants to figure out how many slices to cut each pie into to make sure everyone gets at least one slice of pie. If all cuts are made across the diameter of the pie, how many slices should he cut each pie into?

*Since there are 135 people attending and 15 pies, we need at least 135 ÷ 15 = 9 pieces per pie. Since the cuts are made across the diameter of the pie, however, all pies must be cut into even numbers of pieces. To have at least one slice per person, Warren should cut each pie into **10** slices.*

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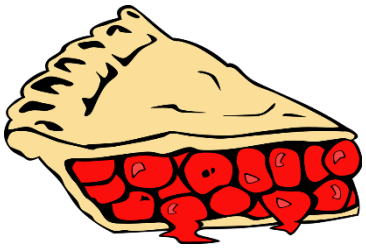

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