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2009 Q1

1. Bridget bought a bag of apples at the grocery store. She gave half of the apples to Ann. Then she gave Cassie 3 apples, keeping 4 apples for herself. How many apples did Bridget buy?

   (A) 3 **(B)** 4 **(C)** 7 **(D)** 11 **(E)** 14

1. **Answer (E):** Work backwards. Bridget had 7 apples before she gave Cassie 3 apples. These 7 apples were half of Bridget's 14 original apples.

   OR

   Let B = Bridget's original number of apples.

$$\frac{B}{2} - 3 = 4$$
$$\frac{B}{2} = 7$$
$$B = 14$$

   So Bridget originally had 14 apples.

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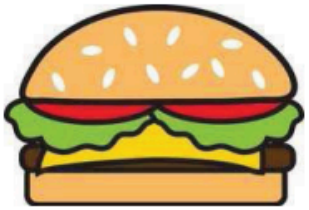
2012 Q1

1. Rachelle uses 3 pounds of meat to make 8 hamburgers for her family. How many pounds of meat does she need to make 24 hamburgers for a neighborhood picnic?

(A) 6 **(B)** $6\frac{2}{3}$ **(C)** $7\frac{1}{2}$ **(D)** 8 **(E)** 9



1. **Answer (E):** Rachelle needs $\frac{24}{8} = 3$ times the amount of meat for the picnic than she would use for her family. So she needs $3 \times 3 = 9$ pounds of meat.

OR

Set up a proportion to compare the two ratios of pounds of meat to number of hamburgers.

$$\frac{3}{8} = \frac{x}{24}$$

Solving for x, $8x = 72$, so $x = 9$ pounds of meat.

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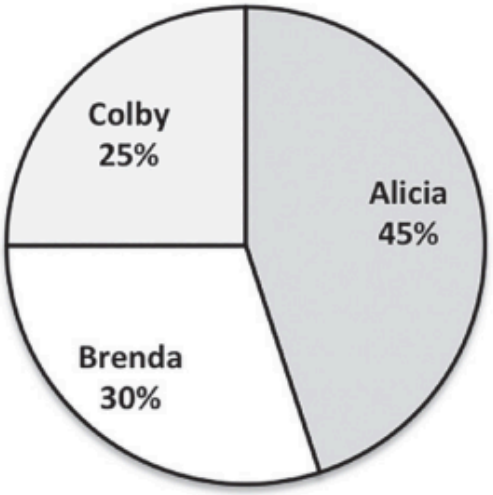
2017 Q2

2. Alicia, Brenda, and Colby were the candidates in a recent election for student president. The pie chart below shows how the votes were distributed among the three candidates. If Brenda received 36 votes, then how many votes were cast all together?



(A) 70 **(B)** 84 **(C)** 100 **(D)** 106 **(E)** 120

2. **Answer (E):** Observe that 36 votes made up 30% of the total number of votes. Thus 12 votes made up 10% of the total number of votes and therefore there were 120 total votes.

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2004 Q3

3. Twelve friends met for dinner at Oscar's Overstuffed Oyster House, and each ordered one meal. The portions were so large, there was enough food for 18 people. If they share, how many meals should they have ordered to have just enough food for the 12 of them?

(A) 8 **(B)** 9 **(C)** 10 **(D)** 15 **(E)** 18

The following information is needed to solve problems 4, 5 and 6.

Ms. Hamilton's eighth-grade class wants to participate in the annual three-person-team basketball tournament.

3. **(A)** If 12 people order $\frac{18}{12} = 1\frac{1}{2}$ times too much food, they should have ordered $\frac{12}{\frac{3}{2}} = \frac{2}{3} \times 12 = 8$ meals.

OR

Let x be the number of meals they should have ordered. Then,

$$\frac{12}{18} = \frac{x}{12},$$

so

$$x = 8.$$

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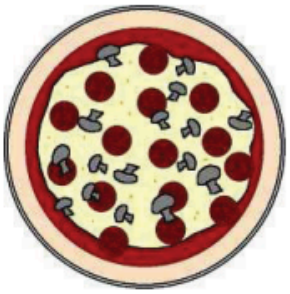
2012 Q4

4. Peter's family ordered a 12-slice pizza for dinner. Peter ate one slice and shared another slice equally with his brother Paul. What fraction of the pizza did Peter eat?

(A) $\frac{1}{24}$ **(B)** $\frac{1}{12}$ **(C)** $\frac{1}{8}$ **(D)** $\frac{1}{6}$ **(E)** $\frac{1}{4}$



4. **Answer (C):** The whole slice that Peter ate was $\frac{1}{12}$ of the pizza. His half of the second slice was half of $\frac{1}{12}$, or $\frac{1}{24}$, of the pizza. The fraction of the pizza that Peter ate was

$$\frac{1}{12} + \frac{1}{24} = \frac{2}{24} + \frac{1}{24} = \frac{3}{24} = \frac{1}{8}.$$