Mixed Numbers
Use What You've Learned
Answers and Explanations

Solve each problem and justify your answer.

1. The twenty-three students in Ms. Robert's class were given a pizza party for winning first place in the Math Olympics. Each student will eat three pieces. If the pizzas are cut in eight pieces, how many pizzas should be ordered?

   $23 \times 3 = 69$ If 23 students each eat three pieces of pizza, the class needs 69 pieces.

   $\frac{69}{8} = 8\frac{5}{8}$ Since $69 \div 8 = 8$ remainder 5, the class needs eight full pizzas and $\frac{5}{8}$ of another pizza. They should order nine pizzas.

2. To raise money to fight cancer, Emma agreed to participate in a walk-a-thon. She signed up 20 people who would pay her \$1 for each $\frac{1}{4}$ mile she walked in one hour. She tried her hardest and walked $3\frac{3}{4}$ miles in one hour. How much did she earn for the American Cancer Society?

   $3\frac{3}{4} = \frac{15}{4}$ Since $3 \times 4 = 12$, there are 12 fourths in 3 miles. Then $\frac{12}{4} + \frac{3}{4} = \frac{15}{4}$. Emma walked 15 quarter miles.

   $15 \times \$20 = \$300$ Since 20 people are paying \$1 for each $\frac{1}{4}$ mile, she earned \$20 for each $\frac{1}{4}$ mile. Fifteen (quarter miles) times \$20 is \$300.

3. To prepare for a $5\frac{1}{2}$ mile race, the race committee will set up water stations every $\frac{1}{4}$ mile. Three volunteers are needed at every station. How many volunteers are needed to cover all the stations?

$5\frac{1}{2} = 5\frac{2}{4}$ We need to find how many fourths are in $5\frac{1}{2}$. One-half mile is the same as $\frac{2}{4}$ mile, so we need to find how many fourths are in $5\frac{2}{4}$.

$5\frac{2}{4} = \frac{22}{4}$ If there is one water station every $\frac{1}{4}$ mile, there needs to be a total of four stations each mile. Since 5 x 4 = 20, 20 stations are needed in 5 miles. Two additional stations are needed for the last $\frac{2}{4}$ mile. That is a total of 22 stations.

22 x 3 = 66 If three volunteers work at each station, the committee needs 66 volunteers.

4. Emily had $7\frac{2}{3}$ six-packs of soda to use at her graduation party. From past experience, she realized that each of her friends liked to have two cans of soda. How many friends would be able to have two sodas at her graduation party?

$7\frac{2}{3} = 7\frac{4}{6}$ A full six-pack has six cans of soda. Emily has $7\frac{2}{3}$ six-packs, seven full six-packs and $\frac{2}{3}$ of a six-pack. This is the same as $7\frac{4}{6}$ six-packs.

$7\frac{4}{6} = \frac{46}{6}$ Since 7 x 6 = 42, there are 42 cans in seven six-packs There are four cans in $\frac{4}{6}$ of a six-pack. That is a total of 46 cans (42 + 4 = 46).

46 ÷ 2 = 23 If each person requires two cans, Emily can serve a total of 23 people.