

3. A survey was taken of teachers at Burger. The ratio of teachers having a flip phone to the teachers having a smart phone was 3 : 4. If 15 more teachers have a smart phone than a flip phone, how many teachers own a flip phone?

4. Beth and Mel are using ribbon to decorate an art project. The ratio of the length of Beth's ribbon to the length of Mel's ribbon is 7 : 3. If Mel's ribbon is 24 inches long, how much longer is Beth's ribbon than Mel's ribbon?

Example

In one class, 3 out of every 8 students have braces. There are 32 students in the class. How many of the students have braces?

Got It?

In the same class of 32 students, 1 of every 4 students wears glasses. How many of the students wear glasses?

I can apply the concept of generating equivalent ratios to solve real-world problems.

Solving Ratio Problems

1. In each of the three grades at Burger the ratio of boys to girls is $\frac{5}{3}$.

a. If there are 75 boys in the sixth grade, how many girls are there?

$$B \begin{array}{|c|c|c|c|c|} \hline 15 & 15 & 15 & 15 & 15 \\ \hline \end{array} = 75 \text{ boys}$$

$$G \begin{array}{|c|c|c|} \hline 15 & 15 & 15 \\ \hline \end{array} = \boxed{45 \text{ Girls}}$$

b. If there are a total of 184 students in the seventh grade, how many are boys?

$$B \begin{array}{|c|c|c|c|c|} \hline 23 & 23 & 23 & 23 & 23 \\ \hline \end{array} = \boxed{115 \text{ Boys}}$$

$$G \begin{array}{|c|c|c|} \hline 23 & 23 & 23 \\ \hline \end{array}$$

c. In the eighth grade, there are 40 more boys than girls. How many girls are there?

$$B \begin{array}{|c|c|c|c|c|} \hline 20 & 20 & 20 & 20 & 20 \\ \hline \end{array}$$

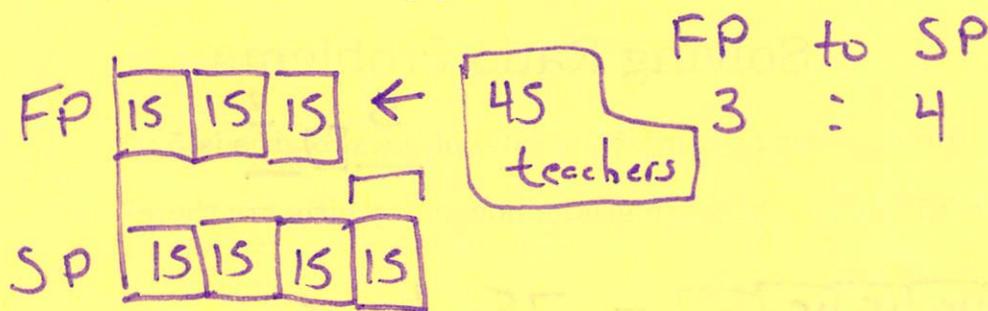
$$G \begin{array}{|c|c|c|} \hline 20 & 20 & 20 \\ \hline \end{array} = \boxed{60 \text{ Girls}}$$

2. In a cereal bar, the ratio of fiber to protein is $\frac{5}{6}$. If the bar contains 30 grams of fiber, how much protein does it contain?

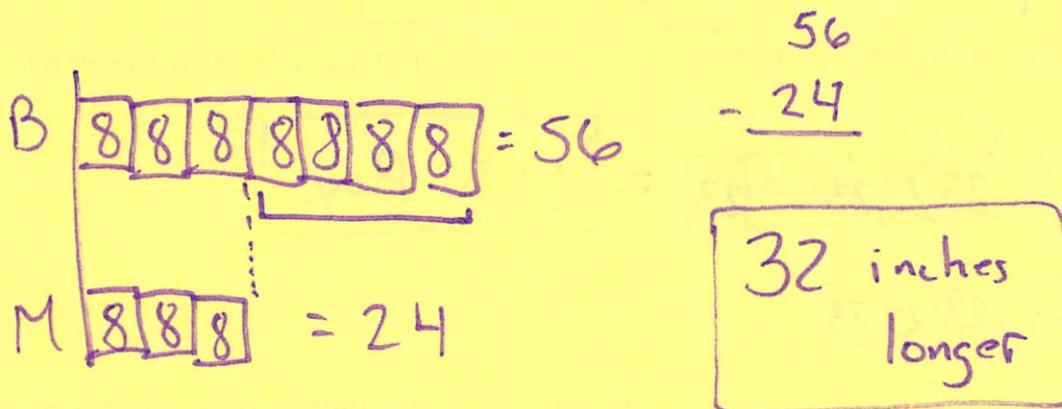
$$F \begin{array}{|c|c|c|c|c|} \hline 6 & 6 & 6 & 6 & 6 \\ \hline \end{array} = 30 \text{ grams}$$

$$P \begin{array}{|c|c|c|c|c|c|} \hline 6 & 6 & 6 & 6 & 6 & 6 \\ \hline \end{array} = \boxed{36 \text{ grams}}$$

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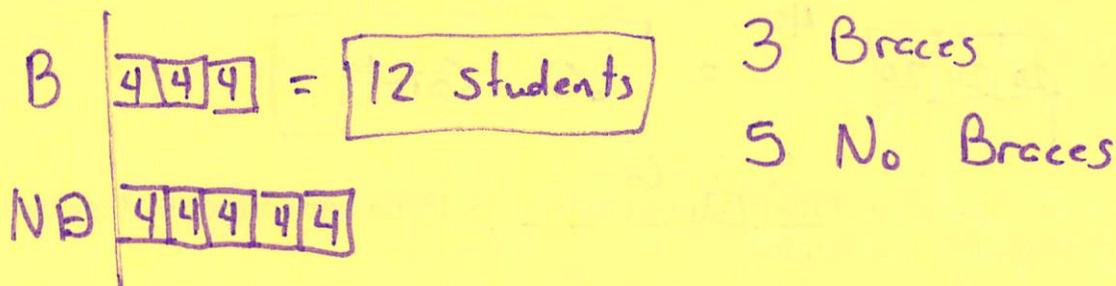


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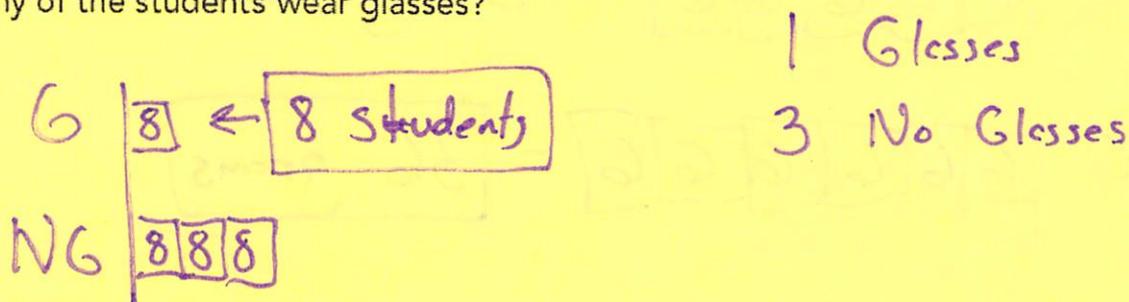
Example

In one class, 3 out of every 8 students have braces. There are 32 students in the class. How many of the students have braces?



Got It?

In the same class of 32 students, 1 of every 4 students wears glasses. How many of the students wear glasses?



7. There are 30 students in the class. $\frac{3}{5}$ of the students in the class are girls and the rest are boys. How many boys are there?

8. Some children were at school camp. $\frac{5}{8}$ of them were girls. If there were 40 girls at the school camp, how many more girls than boys were there?

9. Sam read $\frac{4}{7}$ of a book on Friday. He has 42 more pages to read before he will reach the end of the book. How many pages did he read on Friday?

10. A jar was full of 50¢ and \$1 coins. $\frac{2}{5}$ of the coins in the jar were of 50¢ coins. The rest were \$1 coins. There were 10 more \$1 coins than of 50¢ coins. How many coins were in the jar altogether?

11. A rope that is 2 feet and 6 inches long is cut into 3 strips in a ratio 2 : 3 : 5.

a. How long is the longest piece?

b. How much longer is the longest piece than the shortest one?

c. What is the length of each piece if they are cut in a 1 : 2 : 3 ratio?

12. A bin of soccer balls, basketballs, and volleyballs contains 112 balls. For every 3 soccer balls, there are 5 basketballs and 6 volleyballs. How many more basketballs are there than soccer balls?

13. Justin is making cookies, using a recipe in which the ratio of flour to chocolate chips to sugar is 4: 2: 1 for each batch. If he is using 8 cups of flour how many cups of sugar does he need?

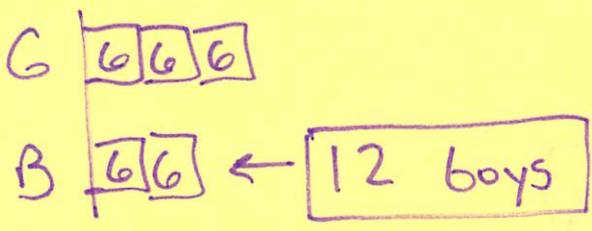
14. A farmer has 4 times as many ducks as chickens. There are 72 more chickens than ducks. How many chickens and ducks does the farmer have altogether?

15. Nancy, Marcus, and Ken shared \$364 among themselves. Marcus received 4 times as much as Ken. Nancy received twice as much money as Marcus. How much money did Marcus receive?

16. Rachel read $\frac{1}{3}$ of a book on Monday. She read $\frac{5}{6}$ of the remaining pages on Tuesday and the rest of the book on Wednesday. She read 40 pages on Tuesday. How many pages does the book have altogether?

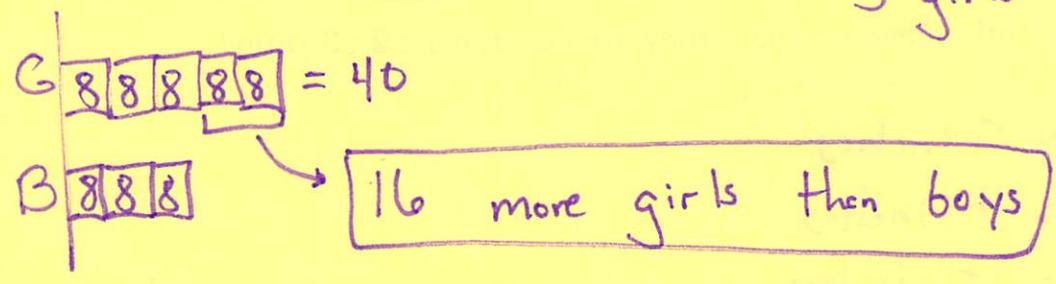
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3 girls to 2 boys
3:2



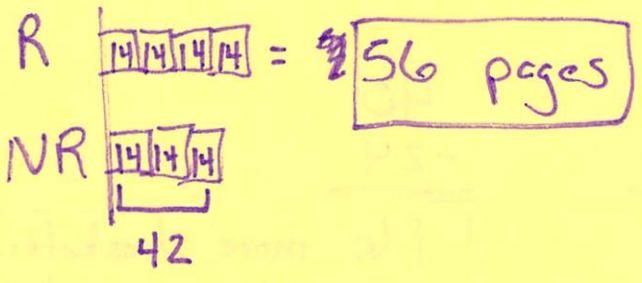
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5 girls to 3 boys



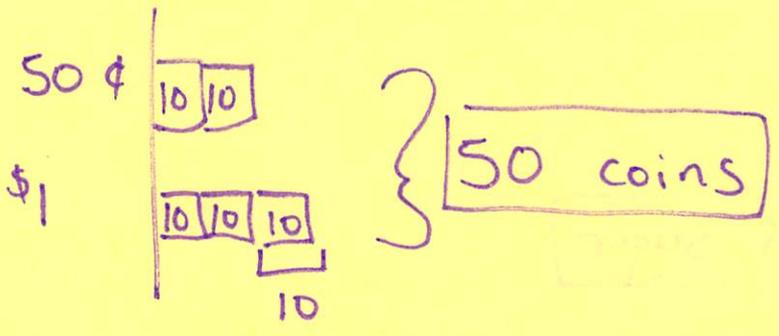
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part read 4 to not read 3



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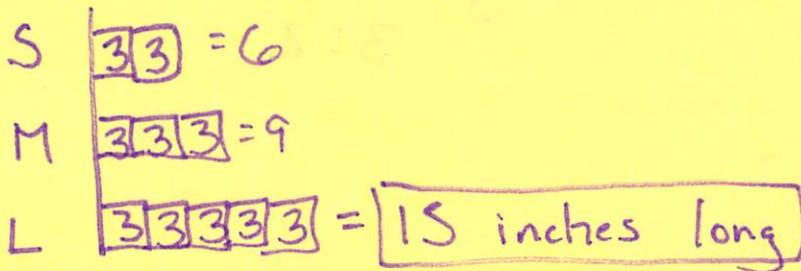
2 50¢ to 3 \$1



30 inches

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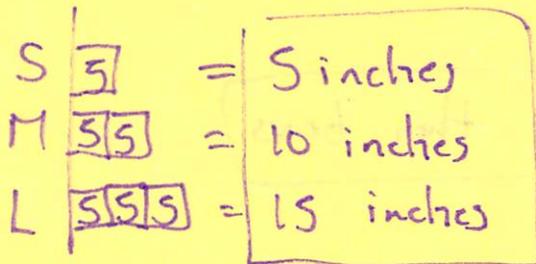
a. How long is the longest piece?



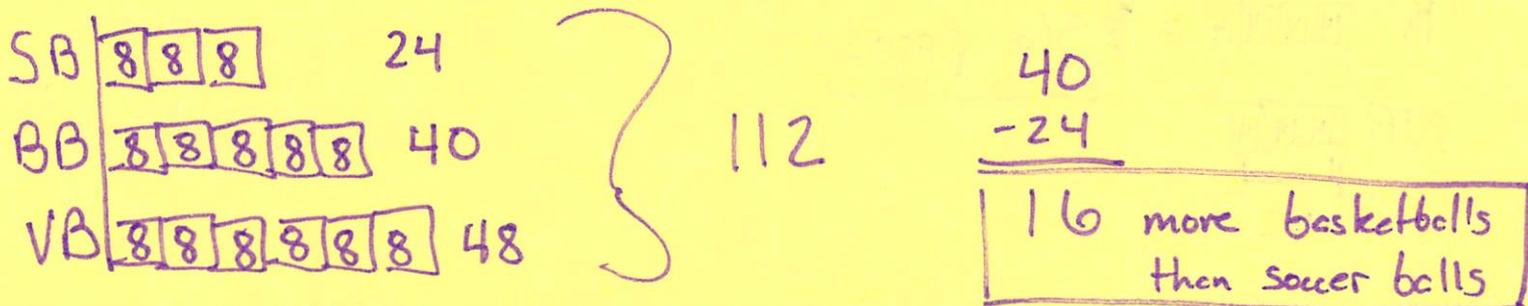
b. How much longer is the longest piece than the shortest one?

$$15 - 6 = 9 \text{ inches longer}$$

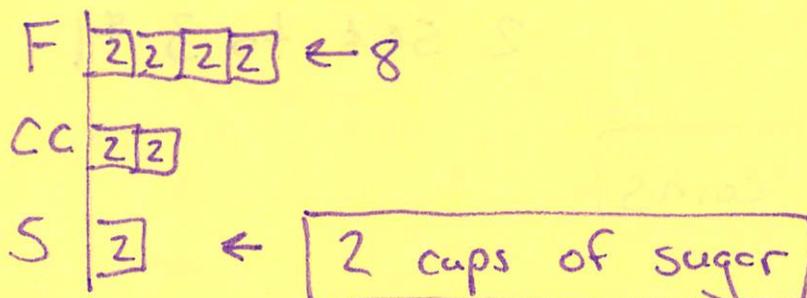
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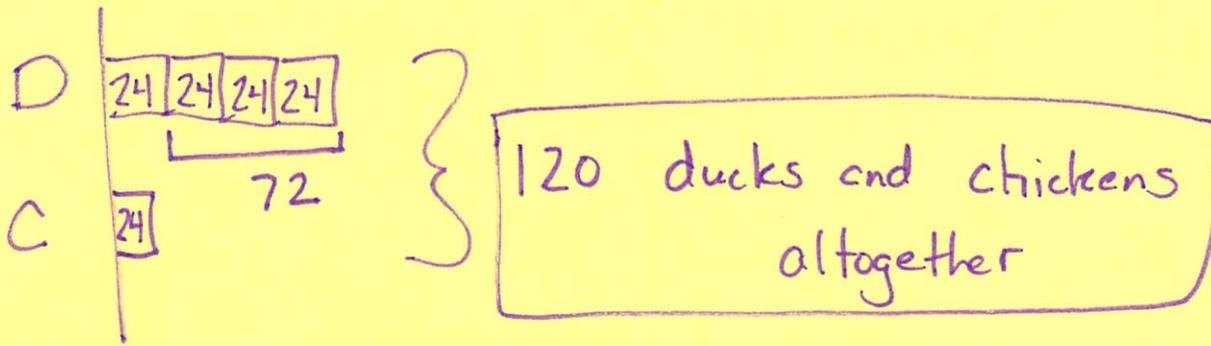


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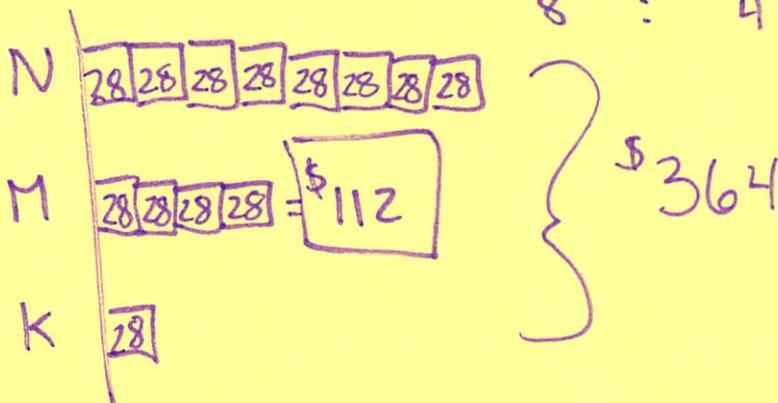
$$D : C \\ 4 : 1 \text{ ratio}$$

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$$\text{Nancy} : \text{Marcus} : \text{Ken} \\ 8 : 4 : 1$$



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