1. It’s Joni’s lucky day and she finds $2.88 in coins while walking across a parking lot. She decides to share a little of it with her two friends. They each get 1/8 of the amount and she keeps the rest. What is the fewest number of coins she could give one of her friends and what are they?
2. A bowling ball and a bag together cost $88. The ball costs three times as much as the bag. How much does the bowling ball cost?
3. What is the missing number?



1. At Raymond’s school, Tuesday was jeans day and everyone wore either blue jeans or black jeans. In his math class they collected data and concluded for every 7 children wearing blue jeans there were 4 wearing black jeans. If there were 451 students in the school on Tuesday, how many were wearing black jeans?
2. A rope that is 64 feet long is cut into 2 pieces. One piece is $\frac{3}{5}$ of the other. How many feet long is the longer piece?
3. Kim was elected class president. Kim received 3 votes for every 2 votes that Amy got. No one else ran for class president. However if 8 of the people who voted for Kim had voted for Amy instead, Kim would have received only 1 vote for every 2 that Amy would have gotten. How many people voted?
4. A chocolate bar is separated into several equal pieces. If one person eats 1/4 of the pieces, and a second person eats 1/2 of the remaining pieces, then there are six pieces left over. Into how many pieces was the original bar divided?
5. The sum of two numbers is 16 and their product is 48. What is the ratio of the two numbers when expressed as an improper fraction in lowest terms?

**BONUS PROBLEMS**

1. It takes Melissa 2 hours to paint one car. It takes Dave 4 hours to paint one car. Kate also takes 4 hours to paint one car. If they all work together, how long will it take them to paint 2 cars?
2. When placing the order for doughnuts for Math Club, the coach asked that for every 2 chocolate doughnuts, there would be 1 old-fashioned doughnut, 3 maple nut doughnuts, and 4 sprinkle doughnuts. If the coach ordered ten dozen doughnuts, how many were maple nut?
3. A bus can hold 24 adults *or* 30 children. 25 children are already on the bus. What is the greatest number of adults that can still get on the bus?
4. In simplest terms, what is the value of the following?

$\frac{6}{.3}$ + $\frac{.3}{.06}$

**Solutions**

*Note: There are many acceptable strategies to solving each problem. This sheet shows just one strategy.*

1. $2.88 divided by 8 is $0.36. The fewest number of coins to make $0.36 is 1 quarter, 1 dime, and 1 penny.

 **Answer: 3 coins: quarter, dime, penny**

1. The ratio of the cost of the ball to the cost of the bag is 3 : 1. So the ball costs ¾ of the total, and the bag costs ¼ of the total. Since the total cost is $88, the ball costs ¾ of 88, which is 66.

**Answer: $66**

1. Lower-right number is always 3 times the lower-left number.

Top number is always 3 times the lower-right number.

**Answer: 39**

1. 4/11 of the students wear black jeans. So,

$\frac{4}{11}$ x 451 = 164

**Answer: 164 students**

1. Ratio of pieces is 1 : $\frac{3}{5}$

Sum of pieces is 64 ft.

So one piece is 64ft ÷ $\frac{8}{5} × \frac{3}{5} $ = 24ft.

And the other piece is 64ft ÷ $\frac{8}{5} ×1 $ = 40ft.

**Answer: 40ft.**

1. Using guess & check:

Trial 1: Kim got 9, Amy got 6.

 Give 8 of Kim’s votes to Amy, so …

 Kim has 1, Amy has 14.

 Incorrect!

Trial 2: Kim got 15, Amy got 10.

 Give 8 of Kim’s votes to Amy, so …

 Kim has 7, Amy has 18.

 Incorrect, but we’re closer.

Trial 3: Kim got 18, Amy got 12.

 Give 8 of Kim’s votes to Amy, so …

 Kim has 10, Amy has 20.

 Yes!

**Answer: 30 total votes**

1. Working backwards, …

If the 2nd person ate half the remaining pieces and was left with 6 pieces, there must have been 12 pieces before he ate any.

So the 1st person ate ¼ of the pieces and was left with 12. So there must have been (12 x 4/3), or 16 pieces to start with.

**Answer: 16 pieces**

1. First, find the two numbers by using trial and error:

 1 x 48 = 48 (good) 1 + 48 = 49 (not 16)

 2 x 24 = 48 (good) 2 + 24 = 26 (not 16)

 3 x 16 = 48 (good) 3 + 16 = 19 (not 16)

 4 x 12 = 48 (good) 4 + 12 = 16 (good!)

So, our two numbers are 4 and 12. An improper fraction is one where the numerator is bigger than the denominator, so that would be $\frac{12}{4}$. Reducing that to lowest terms, we get 3.

**Answer: 3**

1. Dave paints ¼ of a car in an hour. Kate paints ¼ of a car in an hour. Melissa paints ½ of a car in an hour. The three fractions add up to one whole car; therefore it takes 2 hours to paint two cars.

**Answer: 2 hours**

1. The continued ratio of chocolate to old-fashioned to maple nut to sprinkles is 2:1:3:4. Then we let the number of chocolate, old-fashioned, maple nut and sprinkles be 2x, x, 3x, and 4x respectively. Since the total number of doughnuts is 120 (ten dozen), we have: 2x + x + 3x + 4x = 10x = 120, therefore x = 12. Since the question asks how many maple nut doughnuts there were, and the number of maple nut doughnuts is equal to 3x, the answer is 36.

**Answer: 36**

1. 24 adults require the same space as 30 children. Simplifying, 4 adults require the same space as 5 children. Since 5 more children could get on the bus to make 30 children, and 5 children require the same space as 4 adults, 4 adults can still get on the bus.

**Answer: 4**

1. The meaning of any fraction $\frac{a}{b}$ is a $÷$ b. Therefore, $\frac{6}{.3}$ means 6 $÷$ 0.3, whose value is 20. Similarly, $\frac{3}{.06}$ means 0.3 $÷$ .06, whose value is 5. The value of the sum is 25.

**Answer: 25**