**In the US how many square feet of pizza are eaten each month?**

* Let’s consider the population of US 300 million.
* Let's say 200 million people eat pizza.
  + Discuss segregation of
    - Age-bracket (below 13 yrs and above 60 won’t consume usually)
    - Availability in the region
* Considering the **average** pizza-eating person eats two slices at a time and eats pizza twice a month.
* That means one person eats four slices a month. If the average size of the pizza slice is 30 inches.
* So 4 pizza slices = 120 square inches.

To summarize:

* Population 300 million people
* People eat pizza 200 million
* Pizza size= 30 sq. inches
* Average people eat four slices of pizza a month
* 4 pieces x 30 square inches = 120 square inches considering 1 square foot per person.
* So 200x1 = 200 million square feet a month

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### **Measuring 6L water from 4L and 9L buckets**

Question: Suppose you have a 4 liter jug and a 9 liter bucket . The buckets have no measurement lines on them either. How could you measure exactly 6 liters using only those buckets and you have as much extra water as you need?

1. Consider 2 buckets, one 4L and other 9L. : Bucket 1 (4L) and Bucket2 (9L)
2. First fill the 9L bucket fully. : 0 L and 9 L
3. **Pour the water into the 4L bucket. : 4 L and 5 L (answer to measuring 5L)**
4. Empty the 4L bucket. : 0 L and 5 L
5. **Fill the 4L bucket from the 9L bucket. : 4 L and 1 L (answer to measuring 1L)**
6. Now you will left with 1L water in the 9L bucket : 0 L and 1 L
7. Now pour this 1L into the 4L bucket : 1 L and 0 L
8. Refill the 9L bucket. : 1 L and 9 L
9. Now pour the water from 9L into the 4L bucket until it fills up. : 4 L and 6 L
10. Now you are left with 6 L water in the 9L bucket.

**Alok has three daughters. His friend Shyam wants to know the ages of his daughters.**

**Alok gives him a first hint.**

**1. The product of their age is 72.**

**Shyam says this is not enough information Alok gives him a second hint.**

**2. The sum of their ages is equal to my house number.**

**Shyam goes out and looks at the house number and tells “I still do not have enough information to determine the ages”.**

**Alok admits that Shyam can not guess and gives him the third hint**

**3. The oldest girl likes strawberry ice cream.**

**Shyam is able to guess after the third hint. Can you guess what the ages of the three daughters are?**

**1. Product of ages is 72**

**Below are all possibilities to get 72 from product of three different ages:**

**1 \* 1 \* 72 = 72**

**1 \* 2 \* 36 = 72**

**1 \* 3 \* 24 = 72**

**1 \* 4 \* 18 = 72**

**1 \* 6 \* 12 = 72**

**1 \* 8 \* 9 = 72**

**2 \* 2 \* 18 = 72**

**2 \* 3 \* 12 = 72**

**2 \* 4 \* 9 = 72**

**2 \* 6 \* 6 = 72**

**3 \* 3 \* 8 = 72**

**3 \* 4 \* 6 = 72**

**2. Sum of the ages is given**

**1 + 1 + 72 = 74**

**1 + 2 + 36 = 39**

**1 + 3 + 24 = 28**

**1 + 4 + 18 = 23**

**1 + 6 + 12 = 19**

**1 + 8 + 9 = 18**

**2 + 2 + 18 = 22**

**2 + 3 + 12 = 17**

**2 + 4 + 9 = 15**

**2 + 6 + 6 = 14**

**3 + 3 + 8 = 14**

**3 + 4 + 6 = 13**

**All sums are unique except 14. So the age sum must have been 14, otherwise, Shyam would have guessed the ages from hint 2 only.**

**So we have two possible combinations to get a sum of 14**

**2 + 6 + 6 = 14**

**3 + 3 + 8 = 14**

**3. Alok has the oldest girl (not two). So the ages must be 3, 3 and 8.**

**(as oldest means that there is a unique largest number among all 3)**

**Part-2: If in the above question, the given hint is:**

**The *youngest girl* likes strawberry ice cream.**

**Then the answer is 2 , 6 and 6 (as youngest means that there is a unique smallest number among all 3)**