















With these few facts, the # gets narrowed down to 119.

I first tried 49, but it didn't fit 3 or 6.

Then I added 70 to keep the nine in place.

I checked and 119 worked...

### Tim, age 13, Expert

The smallest possible number of wings that could be in the bucket would be 119.

First, let the smallest number of chicken wings be  $x$ .

If we take two, three, four, five, six at a time, there will be one, two, three, four and five left. So if we had one more, it would be the LCM for 2,3,4,5,6 and remains 1 when divides by 7, which is also  $x+1$ .

So:  $x+1 = \text{LCM}\{2,3,4,5,6\}$  and  $X$  divisible by 7

$$x+1 = \text{LCM}(2)(3)(2*2)(5)(2*3)$$

$$x+1 = 2*2*3*5$$

$$x+1 = 60$$

So the multiple of 60's would divisible by 2,3,4,5,6. then  $x$  could by 59,119,179... and 119 is the smallest number which can be divided by 7.

*Tim went a step farther than most of the students and realized that if he used the least common multiple, he could quickly determine the correct number.*

*Besides using an expert strategy, he has formatted his solution so that it's clear to read and also included enough steps to be complete.*

### Scoring Rubric

A **problem-specific rubric** can be found linked from the problem to help in assessing student solutions. We consider each category separately when evaluating the students' work, thereby providing more focused information regarding the strengths and weaknesses in the work.

We hope these packets are useful in helping you make the most of the Pre-Algebra Problems of the Week. Please let me know if you have ideas for making them more useful.

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