

Evelyn Boyd Granville Puzzle



Evelyn Boyd Granville is the second Black woman we know of to earn a PhD in mathematics and she worked for NASA and others in support of space missions: “...this was the most interesting job of my lifetime—to be a member of a group responsible for writing computer programs to track the paths of vehicles in space.” Then she transitioned to college teaching, where she focused on the mathematics education of future teachers.



Granville advises that:

“Life is best lived when you try to leave the world in better shape.”

Granville’s favorite puzzle: Rabbits and chickens have been placed in a cage. You count 48 feet and 17 heads. How many of each animal are there?

1. Draw seventeen circles to represent the seventeen heads.
2. How many feet do chickens have?
3. How many feet do rabbits have?
4. Notice that rabbits and chickens each have at least two feet. Draw two feet attached to each head.
5. How many feet did you draw?
6. How many feet remain from the 48 total feet?
7. Do the remaining feet belong to chickens or rabbits?
8. Put the remaining feet on some of the heads to complete the pictures.
9. How many heads have two feet?
10. How many heads belong to the chickens?
11. How many heads belong to the rabbits?

Extension: Think about changing the numbers of heads and feet. Can you always find a solution for the numbers of chickens and rabbits? Why or why not?

(Optional) **For those who have seen linear equations:**

- Let x = the number of rabbits and y = the number of chickens. In terms of x and y , how many heads are there?
- In terms of x and y , how many feet are there?
- Solve these equations for x and y .