Answer

Eric lost a red sock.

Let x be the number of ways Eric can take out two socks of the same colour. Let y be the number of ways Eric can take out two different-coloured socks. Since the probability of the two socks being the same colour is 50%, then:

$x=y$

Let r be the number of red socks, and g be the number of green socks. If the first sock Eric takes out of his drawer is red, he will then have r-1 red socks in the drawer, but still g green socks. So he has r*(r-1), or (r^2)-r, ways of taking out two red socks, and r*g ways of taking out a red sock first and a green sock second. Using similar logic, we can determine that he has g*(g-1), or (g^2)-g, ways of taking out two green socks, and g*r, or r*g, ways of taking out a green sock first and a red sock second. Therefore:

$x=(r^2)-r+(g^2)-g$

And:

$y=(r*g)+(r*g)$
$y=2*r*g$

Combining this with our first equation:

$(r^2)-r+(g^2)-g=2*r*g$
$(r^2)-(2*r*g)+(g^2)=r+g$
$(r-g)^2=r+g$

This means that the total number of socks equals the square of the difference between red socks and green socks. Since the socks are always bought or received in pairs, there must have originally been an even number of socks. But since only one was lost, there must be an odd number now. The only odd square number between 250 and 350 is 289, so this must be the total number of socks, and there must be sqrt(289), or 17, more red socks than green ones. Therefore:

$r+g=289$
$r-g=17$

Solving for these equations, we get r=153 and g=136. Since there is now an odd number of red socks and an even number of green socks, the lost sock must be red.