High Flyin' Solution

Solution 1:

20% of the passengers are women, or $\frac{1}{5}$

$\frac{1}{4}$ of the passengers are boys

$\frac{1}{8}$ of the passengers are men

There are 68 girls.

Add together $\frac{1}{5}$(women), $\frac{1}{4}$(boys), and $\frac{1}{8}$(men) to find the fractional part represented by these three groups. The sum of these three fraction is $\frac{23}{40}$. Therefore the girls represent the other $\frac{17}{40}$ of the passengers.

Write a proportion to find the total number of passengers.

$\frac{17}{40} = \frac{68}{\quad}$

This means there are a total of 160 passengers.

The question asked for the number of seats on the plane. Since the 160 passengers represented $\frac{2}{3}$ of the plane, $\frac{1}{3}$ of the plane would be 80. This makes the entire plane ($\frac{3}{3}$) have a capacity of 240 seats.

Solution 2:

Since 20% of the passengers are women, 25% of the passengers are boys, and 12.5% of the passengers are men, that leaves 42.5% of the passengers to be girls.

Since there are 68 girls and this represents 42.5% of the passengers, divide 68 by 0.425 to find the total number of passengers on the plane. This means there are 160

passengers. If this is $\frac{2}{3}$ of the plane, $\frac{1}{3}$ of the plane would be 80. This makes the entire plane ($\frac{3}{3}$) have a capacity of 240 seats.