Step-1

Solve the following problem:

Maximize: $5x+6y+9z$

Subject to:

$$\begin{aligned} x+y+z &\le 100,000 \\ z &\le 20,000 \\ x &\ge z \\ x,y,z &\ge 0 \end{aligned}$$

Step-2

To solve the above problem consider the inequalities to be strict equalities as given below:

$$\begin{aligned} x+y+z &= 100,000 \\ z &= 20,000 \\ x &= z \end{aligned}$$

Now, do the following calculations:

$$\begin{aligned} x+y+z &= 100,000 \\ x+y+x &= 100,000 \\ 2x+y &= 100,000 \end{aligned}$$

So,

$$\begin{aligned} y &= 100,000-2(20,000) \\ y &= 60,000 \end{aligned}$$

Step-3

Therefore, the variable has following values:

$$\boxed{\begin{aligned} x &= 20,000 \\ y &= 60,000 \\ z &= 20,000 \end{aligned}}$$