```
In[37]:= M3 = {{-(ℓ c γ) - c Subscript[r, x], c Subscript[r, x]},
            {β (1 - ℓ c γ - c Subscript[r, x]), -β + β c Subscript[r, x]}};
         M3 // MatrixForm
         {val, vec} = Eigensystem[M3];
         val⟦2⟧(* The eigenvalue of M1 *)
         {1, vec⟦2⟧⟦2⟧ / vec⟦2⟧⟦1⟧}(* Corresponding eigenvector *)
```

Out[38]//MatrixForm=

$$\begin{pmatrix} -c\ell\gamma - c r_x & c r_x \\ \beta\ (1 - c\ell\gamma - c r_x) & -\beta + c\beta r_x \end{pmatrix}$$

Out[40]=

$$\frac{1}{2}\left(-\beta - c\ell\gamma - c r_x + c\beta r_x + \sqrt{-4 c\ell\beta\gamma + (\beta + c\ell\gamma + c r_x - c\beta r_x)^2}\right)$$

Out[41]=

$$\Big\{1, -\left((2\beta\,(-1 + c\ell\gamma + c r_x))\Big/\left(\beta - c\ell\gamma - c r_x - c\beta r_x + \sqrt{\left(\beta^2 - 2c\ell\beta\gamma + c^2\ell^2\gamma^2 + 2c\beta r_x - 2c\beta^2 r_x + 2c^2\ell\gamma r_x - 2c^2\ell\beta\gamma r_x + c^2 r_x^2 - 2c^2\beta r_x^2 + c^2\beta^2 r_x^2\right)}\right)\right)\Big\}$$

```
In[42]:= A3 := ℓ c γ + c Subscript[r, x];
         B3 := 1 - c Subscript[r, x];
         Simplify[val⟦2⟧ - (-A3 / 2 - (B3 β) / 2 + (1 / 2) Sqrt[(A3 + B3 β) ^2 - 4 ℓ c β γ])]
         (* Check the form of λ *)
         Simplify[vec⟦2⟧ - ({(1 / (2 (1 - A3) β)) *
               (-A3 + B3 β + Sqrt[(A3 - B3 β) ^2 + 4 c Subscript[r, x] β (1 - A3)]), 1}
             (* Check the form of corresonding eigenvector. *)
         )]
```

Out[44]=

0

Out[45]=

{0, 0}