**Problem**

Consider:



How many eigenvalues does this matrix have?

**Solution**

To find the eigenvalues, we solve the characteristic equation:

)=0

Substituting the values:

det = 0



Expanding the determinant:

(2−)(4−)(2−) = 0

This gives us *λ*=2 & *λ*=4. So, the matrix has two eigenvalues (i.e., 2 & 4).

**Answer: 2**