```
n = 2; σ[i_, j_] := { σ[i]^2                 i == j
                    { σ[i] σ[j] p[i, j]     True ; p[i_, j_] := { ρ[j, i]   j < i
                                                                { ρ[i, j]   True
```

```
M = Table[σ[i, j], {i, n}, {j, n}]
```

$$\{\{\sigma[1]^2,\ \rho[1,\ 2]\ \sigma[1]\ \sigma[2]\},\ \{\rho[1,\ 2]\ \sigma[1]\ \sigma[2],\ \sigma[2]^2\}\}$$

```
Eigenvectors[M]
```

$$\left\{\left\{-\frac{-\sigma[1]^2+\sigma[2]^2+\sqrt{\sigma[1]^4-2\,\sigma[1]^2\,\sigma[2]^2+4\,\rho[1,\ 2]^2\,\sigma[1]^2\,\sigma[2]^2+\sigma[2]^4}}{2\,\rho[1,\ 2]\ \sigma[1]\ \sigma[2]},\ 1\right\},\right.$$
$$\left.\left\{-\frac{-\sigma[1]^2+\sigma[2]^2-\sqrt{\sigma[1]^4-2\,\sigma[1]^2\,\sigma[2]^2+4\,\rho[1,\ 2]^2\,\sigma[1]^2\,\sigma[2]^2+\sigma[2]^4}}{2\,\rho[1,\ 2]\ \sigma[1]\ \sigma[2]},\ 1\right\}\right\}$$

```
Eigenvalues[M]
```

$$\left\{\frac{1}{2}\left(\sigma[1]^2+\sigma[2]^2-\sqrt{\sigma[1]^4-2\,\sigma[1]^2\,\sigma[2]^2+4\,\rho[1,\ 2]^2\,\sigma[1]^2\,\sigma[2]^2+\sigma[2]^4}\right),\right.$$
$$\left.\frac{1}{2}\left(\sigma[1]^2+\sigma[2]^2+\sqrt{\sigma[1]^4-2\,\sigma[1]^2\,\sigma[2]^2+4\,\rho[1,\ 2]^2\,\sigma[1]^2\,\sigma[2]^2+\sigma[2]^4}\right)\right\}$$