

```
> restart:
> with(linalg):
Warning, the protected names norm and trace have been redefined and
unprotected
```

```
> A:=matrix([[1,sin(0),cos(0)],[1,sin(4*Pi/12),cos(4*Pi/12)],[1
,sin(8*Pi/12),cos(8*Pi/12)],[1,sin(12*Pi/12),cos(12*Pi/12)],[
1,sin(16*Pi/12),cos(16*Pi/12)],[1,sin(20*Pi/12),cos(20*Pi/12)
]]): B:=transpose(A): X:=matrix([[c],[a],[b]]):
Y:=matrix([[1.0],[1.6],[1.4],[0.6],[0.2],[0.8]]):
> evalm(A)*evalm(X)=evalm(Y);
```

$$\begin{bmatrix} 1 & 0 & 1 \\ 1 & \frac{1}{2}\sqrt{3} & \frac{1}{2} \\ 1 & \frac{1}{2}\sqrt{3} & -\frac{1}{2} \\ 1 & 0 & -1 \\ 1 & -\frac{1}{2}\sqrt{3} & -\frac{1}{2} \\ 1 & -\frac{1}{2}\sqrt{3} & \frac{1}{2} \end{bmatrix} \begin{bmatrix} c \\ a \\ b \end{bmatrix} = \begin{bmatrix} 1.0 \\ 1.6 \\ 1.4 \\ .6 \\ .2 \\ .8 \end{bmatrix}$$

```
> evalm(B) * evalm(A) * evalm(X) = evalm(B) * evalm(Y);
```

$$\begin{bmatrix} 1 & 1 & 1 & 1 & 1 & 1 \\ 0 & \frac{1}{2}\sqrt{3} & \frac{1}{2}\sqrt{3} & 0 & -\frac{1}{2}\sqrt{3} & -\frac{1}{2}\sqrt{3} \\ 1 & \frac{1}{2} & -\frac{1}{2} & -1 & -\frac{1}{2} & \frac{1}{2} \end{bmatrix} \begin{bmatrix} 1 & 0 & 1 \\ 1 & \frac{1}{2}\sqrt{3} & \frac{1}{2} \\ 1 & \frac{1}{2}\sqrt{3} & -\frac{1}{2} \\ 1 & 0 & -1 \\ 1 & -\frac{1}{2}\sqrt{3} & -\frac{1}{2} \\ 1 & -\frac{1}{2}\sqrt{3} & \frac{1}{2} \end{bmatrix} \begin{bmatrix} c \\ a \\ b \end{bmatrix} =$$

