

Exercice 24  
Série 4

a)

```
vecA := matrix([2, 5]);  
vecB := matrix([-8, -6]);
```

$$\begin{pmatrix} 2 \\ 5 \end{pmatrix}$$
$$\begin{pmatrix} -8 \\ -6 \end{pmatrix}$$

La longueur de projection orthogonale de vecA sur vecB vaut:

```
abs(linalg::scalarProduct(vecA, vecB)/norm(vecB,2))
```

$$\frac{23}{5}$$

b)

```
vecA := matrix([1,8,0]);  
vecB := matrix([2,2,3]);  
abs(linalg::scalarProduct(vecA, vecB)/norm(vecB,2))
```

$$\begin{pmatrix} 1 \\ 8 \\ 0 \end{pmatrix}$$
$$\begin{pmatrix} 2 \\ 2 \\ 3 \end{pmatrix}$$
$$\frac{18 \cdot \sqrt{17}}{17}$$

```
float(18/17*17^(1/2))
```

$$4.365641251$$