```
> with(LinearAlgebra);
```

[&x, Add, Adjoint, BackwardSubstitute, BandMatrix, Basis, BezoutMatrix, BidiagonalForm, BilinearForm, CARE, CharacteristicMatrix, CharacteristicPolynomial, Column, ColumnDimension, ColumnOperation, ColumnSpace, CompanionMatrix, CompressedSparseForm, ConditionNumber, ConstantMatrix, ConstantVector, Copy, CreatePermutation, CrossProduct, DARE, DeleteColumn, DeleteRow, Determinant, Diagonal, DiagonalMatrix, Dimension, Dimensions, DotProduct, EigenConditionNumbers, Eigenvalues, Eigenvectors, Equal, ForwardSubstitute, FrobeniusForm, FromCompressedSparseForm, FromSplitForm, GaussianElimination, GenerateEquations, GenerateMatrix, Generic, GetResultDataType, GetResultShape, GivensRotationMatrix, GramSchmidt, HankelMatrix, HermiteForm, HermitianTranspose, HessenbergForm, HilbertMatrix, HouseholderMatrix, IdentityMatrix, IntersectionBasis, IsDefinite, IsOrthogonal, IsSimilar, IsUnitary, JordanBlockMatrix, JordanForm, KroneckerProduct, LA_Main, LUDecomposition, LeastSquares, LinearSolve, LyapunovSolve, Map, Map2, MatrixAdd, MatrixExponential, MatrixFunction, MatrixInverse, MatrixMatrixMultiply, MatrixNorm, MatrixPower, MatrixScalarMultiply, MatrixVectorMultiply, MinimalPolynomial, Minor, Modular, Multiply, NoUserValue, Norm, Normalize, NullSpace, OuterProductMatrix, Permanent, Pivot, PopovForm, ProjectionMatrix, QRDecomposition, RandomMatrix, RandomVector, Rank, RationalCanonicalForm, ReducedRowEchelonForm, Row, RowDimension, RowOperation, RowSpace, ScalarMatrix, ScalarMultiply, ScalarVector, SchurForm, SingularValues, SmithForm, SplitForm, StronglyConnectedBlocks, SubMatrix, SubVector, SumBasis, SylvesterMatrix, SylvesterSolve, ToeplitzMatrix, Trace, Transpose, TridiagonalForm, UnitVector, VandermondeMatrix, VectorAdd, VectorAngle, VectorMatrixMultiply, VectorNorm, VectorScalarMultiply, ZeroMatrix, ZeroVector, Zip] **(1)**

```
> a := ⟨1, 1⟩;
```

$$a := \begin{bmatrix} 1 \\ 1 \end{bmatrix} \quad \textbf{(2)}$$

```
> v := ⟨3, 2⟩;
```

$$v := \begin{bmatrix} 3 \\ 2 \end{bmatrix} \quad \textbf{(3)}$$

```
> x := a + t·v;
```

$$x := \begin{bmatrix} 3\,t + 1 \\ 2\,t + 1 \end{bmatrix} \quad \textbf{(4)}$$

```
> pt0 := subs(t = 0, x);
```

$$pt0 := \begin{bmatrix} 1 \\ 1 \end{bmatrix} \quad \textbf{(5)}$$

```
> pt1 := subs(t = 1, x);
```

(6)

$$pt1 := \begin{bmatrix} 4 \\ 3 \end{bmatrix} \quad (6)$$

```
> pt2 := subs(t = 2, x);
```

$$pt2 := \begin{bmatrix} 7 \\ 5 \end{bmatrix} \quad (7)$$

```
> pt3 := subs(t = 3, x);
```

$$pt3 := \begin{bmatrix} 10 \\ 7 \end{bmatrix} \quad (8)$$

```
> L2 := [pt0, pt1];
```

$$L2 := \left[\begin{bmatrix} 1 \\ 1 \end{bmatrix}, \begin{bmatrix} 4 \\ 3 \end{bmatrix} \right] \quad (9)$$

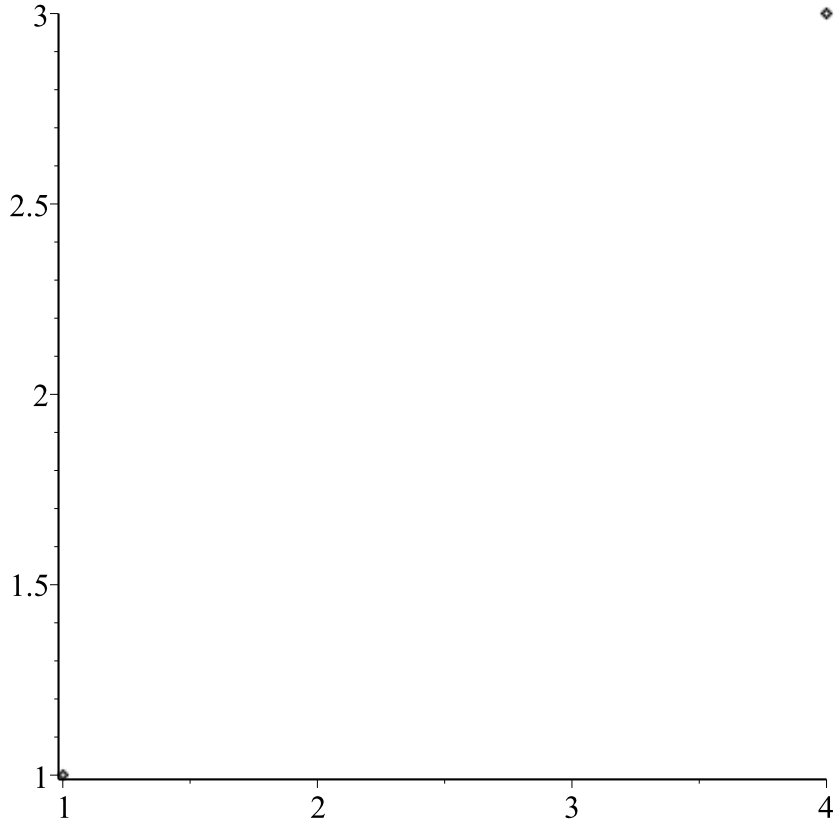
```
> L4 := [pt0, pt1, pt2, pt3];
```

$$L4 := \left[\begin{bmatrix} 1 \\ 1 \end{bmatrix}, \begin{bmatrix} 4 \\ 3 \end{bmatrix}, \begin{bmatrix} 7 \\ 5 \end{bmatrix}, \begin{bmatrix} 10 \\ 7 \end{bmatrix} \right] \quad (10)$$

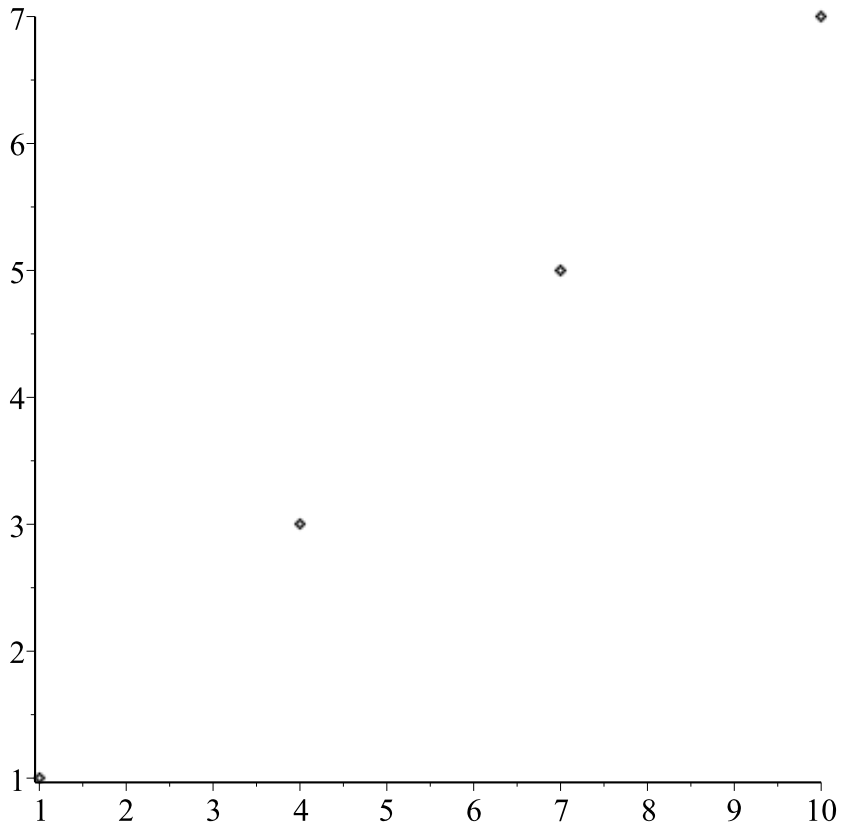
```
> with(plots);
```

[*animate*, *animate3d*, *animatecurve*, *arrow*, *changecoords*, *complexplot*, *complexplot3d*, *conformal*, *conformal3d*, *contourplot*, *contourplot3d*, *coordplot*, *coordplot3d*, *densityplot*, *display*, *dualaxisplot*, *fieldplot*, *fieldplot3d*, *gradplot*, *gradplot3d*, *implicitplot*, *implicitplot3d*, *inequal*, *interactive*, *interactiveparams*, *intersectplot*, *listcontplot*, *listcontplot3d*, *listdensityplot*, *listplot*, *listplot3d*, *loglogplot*, *logplot*, *matrixplot*, *multiple*, *odeplot*, *pareto*, *plotcompare*, *pointplot*, *pointplot3d*, *polarplot*, *polygonplot*, *polygonplot3d*, *polyhedra_supported*, *polyhedraplot*, *rootlocus*, *semilogplot*, *setcolors*, *setoptions*, *setoptions3d*, *spacecurve*, *sparsematrixplot*, *surfdata*, *textplot*, *textplot3d*, *tubeplot*] (11)

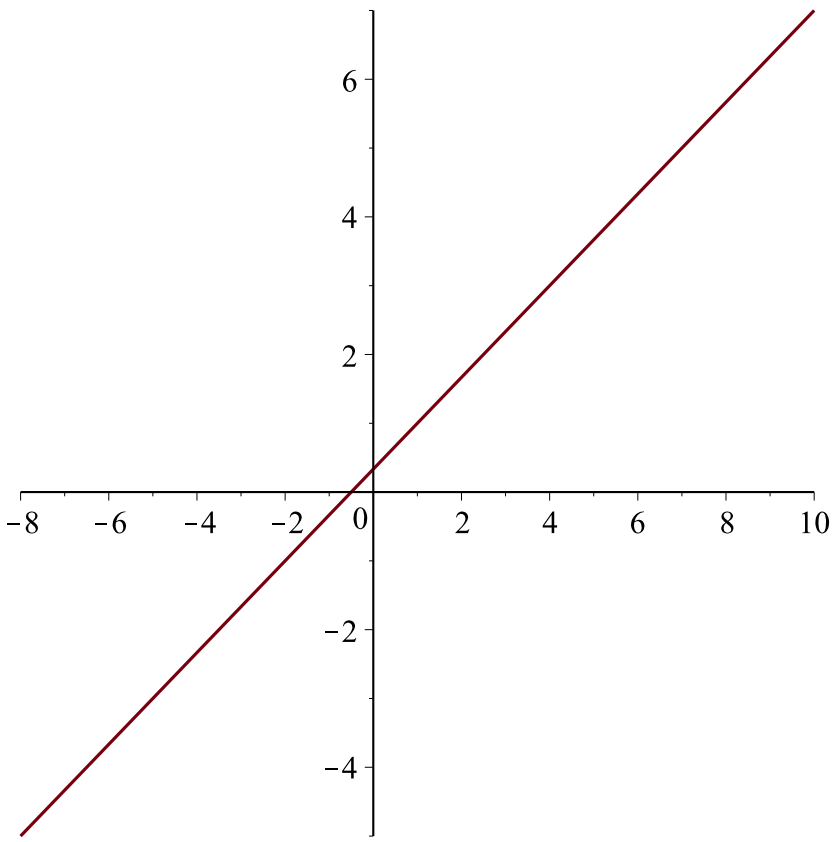
```
> pointplot(L2);
```




```
> pointplot(L4);
```




```
> plot([x[1], x[2], t=-3..3]);
```


6
4
2
−8
−6
−4
−2
0
2
4
6
8
10
−2
−4