Readiness Assurance Outcomes

Before beginning this module, each student should be able to...

- Add Euclidean vectors and multiply Euclidean vectors by scalars.
- Add complex numbers and multiply complex numbers by scalars.
- Add polynomials and multiply polynomials by scalars.
- Perform basic manipulations of augmented matrices and linear systems **(Standard(s) E1,E2,E3)**.

Readiness Assurance Resources

The following resources will help you prepare for this module.

- `https://www.khanacademy.org/math/precalculus/vectors-precalc/vector-addition-subtraction/v/adding-and-subtracting-vectors`
- `https://www.khanacademy.org/math/precalculus/vectors-precalc/combined-vector-operations/v/combined-vector-operations-example`
- `https://www.khanacademy.org/math/precalculus/imaginary-and-complex-numbers/adding-and-subtracting-v/adding-complex-numbers`
- `https://www.khanacademy.org/math/algebra/introduction-to-polynomial-expressions/adding-and-subtrac v/adding-and-subtracting-polynomials-1`

Readiness Assurance Test

Choose the most appropriate response for each question.

1) Simplify the following vector expression.

$$2\begin{bmatrix}3\\-1\\0\end{bmatrix} - 3\begin{bmatrix}0\\2\\1\end{bmatrix}$$

(a) $\begin{bmatrix}0\\4\\-7\end{bmatrix}$ (b) $\begin{bmatrix}6\\-8\\-3\end{bmatrix}$ (c) $\begin{bmatrix}3\\2\\-5\end{bmatrix}$ (d) $\begin{bmatrix}-2\\0\\1\end{bmatrix}$

2) Simplify the complex number expression $-4(3-2i)+2(5+i)$.

(a) $3-7i$ (b) $4+i$ (c) $-2+10i$ (d) $-1-5i$

3) Simplify $3f(x)-2g(x)$ where $f(x)=7-x^2$ and $g(x)=2x^3+x-1$.

(a) x^3+4x-5 (b) $-4x^3-3x^2-2x+23$ (c) $3x^3+5x^2-3x+17$ (d) $-x^3+19x^2-4$

4) TODO some problems based on module E.