

Daily Prep Assignment for Feb 18th

Overview

Basic learning objectives

These are the tasks you should be able to perform with reasonable fluency **when you arrive at our next class meeting**. Important new vocabulary words are indicated *in italics*.

- Understand that lines can be written parametrically in \mathbb{R}^2 and \mathbb{R}^3 .
- Know the *scalar equation* and *vector equation* for a plane in \mathbb{R}^3 .
- Understand that curves in space can be parametrized by *vector valued functions*.

Advanced learning objectives

In addition to mastering the basic objectives, here are the tasks you should be able to perform **after class, with practice**.

- Parametrize lines given information such as points it passes through and direction it points in.
- Write the equation for a plane given points it passes through and a normal vector.
- Understand how the different forms of the equation for a plane relate to one another.
- Answer geometric questions about lines and planes in \mathbb{R}^3 using algebra and vector operations.
- Understand that one curve has many parametrizations and interpret the difference between them.
- Parametrize the trace of a function of several variables.

To prepare for class

Preview activities:

- Preview activity 9.5.1
- Preview activity 9.6.1

Reading:

- Read section 9.5
- Read section 9.6

Watching: Watch these additional resources if you want support reading the text.

1. Overview of 9.5: <https://youtu.be/yWyC1SwpTrs>
2. Overview of 9.6: <https://youtu.be/01AYoaGCRVs>

During and after class

- Activity 9.5.2
- Activity 9.5.3
- Activity 9.5.4
- Activity 9.5.5
- Activity 9.6.2
- Activity 9.6.3
- Activity 9.6.4
- WeBWork is optional