Calculus II

Preface

Here are a set of problems for my Calculus I notes. These problems do not have any solutions available on this site. These are intended mostly for instructors who might want a set of problems to assign for turning in. I try to put up both practice problems (with solutions available) and these problems at the same time so that both will be available to anyone who wishes to use them.

Vectors – The Basics

1. Describe the difference between \((4, -1)\) and \((4, -1)\). Illustrate the difference with a sketch.

For problems 2 – 6 give the vector for the set of points. Find its magnitude and determine if the vector is a unit vector.

2. The line segment from \((6, -2, 3)\) to \((-3, -2, 1)\).

3. The line segment from \(\left(1, -\frac{1}{5}\right)\) to \(\left(\frac{8}{5}, \frac{3}{5}\right)\).

4. The line segment from \((2, -1, 5)\) to \((8, -3, -6)\).

5. The position vector for \((-12, 4, 8)\).

6. The position vector for \((\cos(\theta), \sin(\theta))\) for any angle \(\theta\).

7. The vector \(\vec{v} = \langle -8, -3 \rangle\) starts at the point \(P = (8, 2)\). At what point does the vector end?

8. The vector \(\vec{v} = \langle 0, 5, -3 \rangle\) starts at the point \(P = (-1, 0, 5)\). At what point does the vector end?

9. The vector \(\vec{v} = \langle -8, -3 \rangle\) ends at the point \(P = (8, 2)\). At what point does the vector start?

10. The vector \(\vec{v} = \langle 4, -2, 1 \rangle\) ends at the point \(P = (7, -7, 2)\). At what point does the vector start?