

Reading Assignment # 13

Math 9 - Prof. Orellana

Oct. 29, 2007

Read Section 13.1 and 13.2 and then answer the following questions.

1. Read Page 801 and give a summary of its contents.
2. What is the three dimensional rectangular coordinate system?
3. Explain Figure 1.
4. Find the equation of the sphere centered at $(2, -1, 3)$ and radius 5.
5. What is the objective of Section 13.1?
6. What is the difference between a displacement vector and a position vector?
7. Explain the definition of vector addition in a geometrical setting. Make sure to draw a figure to better explain.
8. Define scalar multiplication in a geometric setting and show some examples.
9. What does it mean for two vectors to be parallel?
10. What are components?
11. How do we define addition and scalar multiplication in an algebraic setting?
12. List the properties of vectors.
13. What are the standard basis vectors and how does a vector $\langle a, b, c \rangle$ relates to these vectors?
14. Read the applications and explain to me how are vectors useful in physics and engineering.