

Math 233 Warm Up Problems

August 28, 2009

1. Find the angle (in radians) between the two vectors in $\mathbb{R}^5$:

$$v_1 = (-1, 1, -2, 3), \quad v_2 = (3, 2, -1, 2)$$

2. Find the angles of the triangle with vertices

$$p_1 = (1, 2, 3), \quad p_2 = (2, 1, 3), \quad p_3 = (3, 1, 2)$$

Lecture Problems

3. Find a parametric equation of the line through the points

$$(1, 2, -8), (9, 7, 1)$$

4. Consider the parametric line

$$X(t) = (4 + 2t, 5 - 7t, -2 - t)$$

- (a) Find two points on this line.
- (b) Find the direction vector of this line.

5. Find the distance between the point $P = (4, 2, -1)$ and the line $X(t) = (1, 2, -1) + t(2, -1, 3)$.