

Homework # 1, Calculus-2

Q3

Find an equation of the sphere with center $(-3, 2, 5)$ and radius 4. What is the intersection of this sphere with the yz -plane?

Q15

Find a vector \mathbf{a} with representation given by the directed line segment \overrightarrow{AB} . Draw \overrightarrow{AB} and the equivalent representation starting at the origin.

$$A(0, 3, 1), \quad B(2, 3, -1)$$

Q26

Find the scalar and vector projections of \mathbf{b} onto \mathbf{a} .

$$\mathbf{a} = \mathbf{i} + \mathbf{j} + \mathbf{k}, \quad \mathbf{b} = \mathbf{i} - \mathbf{j} + \mathbf{k}$$

Q34

(a) Find a nonzero vector orthogonal to the plane through the points P , Q , and R , and (b) find the area of triangle PQR .

$$P(0, 0, -3), \quad Q(4, 2, 0), \quad R(3, 3, 1)$$

Q40+15=Q55

Find the distance between the given parallel planes.

$$2x - 3y + z = 4, \quad 4x - 6y + 2z = 3$$
