**Q1. Verify that Eigen value is 4 and Eigen Vector v = (1, 1) for given matrix A.**

**A =**

**Q2. Verify that Eigen value is 3 and Eigen Vector v = (2, 1, -1) for given matrix A.**

**A =**

**Q3. Given that v1 = (1, -2) and v2 = (1, 1) are eigen vectors of A, determine the eigen values of A.**

**A =**

**Q4. Determine all eigen values and corresponding eigen vectors of the given matrix A. If,**

1. **A =**
2. **A =**
3. **A =**