

MATH 10A (B. Engheta) – Quiz #4 – January 19, 2006

On this quiz, you don't need to show any work.

Suppose that  $M$  is a  $3 \times 3$  matrix whose columns are given by the vectors  $\mathbf{a}, \mathbf{b}, \mathbf{c}$  (in that order). And suppose that  $\det(M) = 10$ .

1. **(2 points)** What is the determinant of the matrix whose columns are given by the vectors  $\mathbf{a}, \mathbf{c}, \mathbf{b}$ ?
2. **(3 points)** What is the determinant of the matrix whose columns are given by the vectors  $\mathbf{b}, \mathbf{c}, \mathbf{a}$ ?
3. **(2 points)** What is the determinant of the matrix whose columns are given by the vectors  $2\mathbf{a}, \mathbf{b}, \mathbf{c}$ ?
4. **(3 points)** What is the determinant of the matrix whose columns are given by the vectors  $2\mathbf{a}, 3\mathbf{b}, 4\mathbf{c}$ ?