MATH 3406 Advanced Linear Algebra: Systems of linear equations

1) What is the best way to solve a system of linear equations?

A) By using substitution
B) By using elimination
C) By using matrices
D) It depends on the system

2) What is the determinant of the following matrix?

$$
\begin{bmatrix}
1 & 2 & 3 \\
4 & 5 & 6 \\
7 & 8 & 9
\end{bmatrix}
$$

A) 0
B) 1
C) -1
D) 6

3) What is the inverse of the following matrix?

$$
\begin{bmatrix}
1 & 2 \\
3 & 4
\end{bmatrix}
$$

A)
$$
\begin{bmatrix}
1 & 2 \\
-3 & -4
\end{bmatrix}
$$
B)
$$
\begin{bmatrix}
-2 & 1 \\
3 & -1
\end{bmatrix}
$$
C)
$$
\begin{bmatrix}
-1 & 2 \\
3 & -4
\end{bmatrix}
$$
D)
$$
\begin{bmatrix}
1 & -2 \\
-3 & 4
\end{bmatrix}
$$

$$

4) What is the solution to the following system of linear equations?

$$
\begin{cases}
x+y=5 \\
2x+3y=11
\end{cases}
$$

A) (2, 3)
B) (4, -1)
C) (-1, 4)
D) (3, 2)

5) What is the solution to the following system of linear equations?

$$
\begin{cases}
2x+5y=12 \\
-3x+6y=15
\end{cases}
$$

A) (3, 1)
B) (1, 3)
C) (-1, 5)
D) (5, -1)

Answer Key: 1) D, 2) D, 3) D, 4) A, 5) B