This print-out should have 5 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering.

001 10.0 points

Evaluate the expression

$$E = \begin{vmatrix} 1 & -3 \\ 2 & 2 \end{vmatrix} + 2 \begin{vmatrix} 1 & 2 \\ -3 & 2 \end{vmatrix}.$$

1. $E = 24$

2. $E = 25$

3. $E = 22$

4. $E = 23$

5. $E = 26$

002 10.0 points

By evaluating the determinant, express

$$f(x) = \begin{vmatrix} 1 & x & x^2 \\ 0 & -4 & 2 \\ 4 & 1 & 0 \end{vmatrix}$$

as a quadratic function in x.

1. $f(x) = -2 + 16x + 8x^2$

2. $f(x) = -2 + 8x + 16x^2$

3. $f(x) = 2 - 8x - 16x^2$

4. $f(x) = 2 + 8x - 16x^2$

5. $f(x) = -2 - 8x + 16x^2$

6. $f(x) = 2 - 16x - 8x^2$

003 10.0 points

Find the value of the determinant

$$D = \begin{vmatrix} 3 & x & -2 \\ 1 & y & -3 \\ -2 & z & 1 \end{vmatrix}.$$

1. $D = -5x + y - 7z$

2. $D = 5x + y - 7z$

3. $D = 5x + y + 7z$

4. $D = -5x - y + 7z$

5. $D = 5x - y + 7z$

6. $D = -5x - y - 7z$

004 10.0 points

Find the value of the determinant

$$D = \begin{vmatrix} 3 & 2 & 1 \\ x & y & z \\ 1 & 2 & -3 \end{vmatrix}.$$

1. $D = 8x + 10y + 4z$

2. $D = -8x - 10y + 4z$

3. $D = 8x + 10y - 4z$

4. $D = 8x - 10y - 4z$

5. $D = -8x - 10y - 4z$

6. $D = -8x + 10y + 4z$

005 10.0 points

Find the value of the determinant

$$D = \begin{vmatrix} 1 & -1 & x \\ -2 & 3 & y \\ -3 & -2 & z \end{vmatrix}.$$

1. $D = 13x - 5y + z$

2. $D = 13x + 5y + z$

3. $D = -13x - 5y - z$

4. $D = -13x + 5y - z$

5. $D = 13x - 5y - z$

6. $D = -13x + 5y + z$