import json

# Define the questions and answers

questions = [

{

"id": 481221,

"question": "If Δ=|a11 a12 a13 a21 a22 a23 a31 a32 a33| and Aij is co-factor of aij, then the value of Δ is equal to",

"options": {

"A": "a11A31 + a12A32 + a13A33",

"B": "a11A11 + a12A21 + a13A31",

"C": "a21A11 + a22A12 + a23A13",

"D": "a11A11 + a21A21 + a31A31"

},

"answer": "D",

"solution": "Δ = a11A11 + a21A21 + a31A31"

},

{

"id": 481222,

"question": "If the matrix [0 -1 3x 1 y -5 -6 5 0] is skew symmetric, then 6x+y is equal to",

"options": {

"A": "6",

"B": "12",

"C": "18",

"D": "2"

},

"answer": "B",

"solution": "y=0 and 3x=6. So, 6x+y=12"

},

{

"id": 481223,

"question": "|3 -4| = |2x 5| then |x| is equal to",

"options": {

"A": "√(5/2)",

"B": "4",

"C": "2√2",

"D": "2"

},

"answer": "C",

"solution": "|3 -4| = |2x 5|. Therefore, 11 = 2x^2 - 5. Hence, x^2 = 8. Thus, |x| = 2√2"

},

{

"id": 481224,

"question": "Which of the following statements are true?",

"options": {

"A": "A square matrix A is said to be non-singular if |A| = 0",

"B": "A square matrix A is invertible if and only if A is non-singular matrix",

"C": "If elements of a row are multiplied with cofactors of any other row, then their sum is zero",

"D": "A is square matrix of order 3 then |Adj.(A)| = |A|^3"

},

"answer": "B",

"solution": "Statement A is incorrect. Statement B is correct. Statement C is correct. Statement D is incorrect."

},

{

"id": 481225,

"question": "The interval in which y = x^2 \* e^(2x) is increasing is",

"options": {

"A": "(-∞, -1)",

"B": "(-1, ∞)",

"C": "(-∞, -1) ∪ (0, ∞)",

"D": "(-∞, 0) ∪ (1, ∞)"

},

"answer": "C",

"solution": "The derivative is positive for x in (-∞, -1) ∪ (0, ∞)"

},

{

"id": 481226,

"question": "If x = t^3, y = t^4, then d^2y/dx^2 at t = 2 is",

"options": {

"A": "8/3",

"B": "1/9",

"C": "2/9",

"D": "9/16"

},

"answer": "B",

"solution": "At t=2, d^2y/dx^2 = 1/9"

}

]

# Convert to JSON

json\_questions = json.dumps(questions, indent=4)

print(json\_questions)