Perhitungan Determinan Matriks 5x5 dengan Ekspansi Kofaktor

det(A) = +2 \* (-1)^1 \* det([[3, 5, 3, 4], [2, 1, 1, 5], [3, 1, 5, 1], [4, 2, 2, 1]]) = 2 \* (1) \* 234 = 468 + 3 \* (-1)^2 \* det([[1, 5, 3, 4], [2, 1, 1, 5], [2, 1, 5, 1], [1, 2, 2, 1]]) = 3 \* (-1) \* 48 = -144 + 1 \* (-1)^3 \* det([[1, 3, 3, 4], [2, 2, 1, 5], [2, 3, 5, 1], [1, 4, 2, 1]]) = 1 \* (1) \* 84 = 84 + 2 \* (-1)^4 \* det([[1, 3, 5, 4], [2, 2, 1, 5], [2, 3, 1, 1], [1, 4, 2, 1]]) = 2 \* (-1) \* 66 = -132 + 2 \* (-1)^5 \* det([[1, 3, 5, 3], [2, 2, 1, 1], [2, 3, 1, 5], [1, 4, 2, 2]]) = 2 \* (1) \* -78 = -156

det(A) = +3 \* (-1)^1 \* det([[1, 1, 5], [1, 5, 1], [2, 2, 1]]) = 3 \* (1) \* -36 = -108 + 5 \* (-1)^2 \* det([[2, 1, 5], [3, 5, 1], [4, 2, 1]]) = 5 \* (-1) \* -63 = 315 + 3 \* (-1)^3 \* det([[2, 1, 5], [3, 1, 1], [4, 2, 1]]) = 3 \* (1) \* 9 = 27 + 4 \* (-1)^4 \* det([[2, 1, 1], [3, 1, 5], [4, 2, 2]]) = 4 \* (-1) \* 0 = 0

det(A) = +1 \* (-1)^1 \* det([[5, 1], [2, 1]]) = 1 \* (1) \* 3 = 3 + 1 \* (-1)^2 \* det([[1, 1], [2, 1]]) = 1 \* (-1) \* -1 = 1 + 5 \* (-1)^3 \* det([[1, 5], [2, 2]]) = 5 \* (1) \* -8 = -40

det(A) = +2 \* (-1)^1 \* det([[5, 1], [2, 1]]) = 2 \* (1) \* 3 = 6 + 1 \* (-1)^2 \* det([[3, 1], [4, 1]]) = 1 \* (-1) \* -1 = 1 + 5 \* (-1)^3 \* det([[3, 5], [4, 2]]) = 5 \* (1) \* -14 = -70

det(A) = +2 \* (-1)^1 \* det([[1, 1], [2, 1]]) = 2 \* (1) \* -1 = -2 + 1 \* (-1)^2 \* det([[3, 1], [4, 1]]) = 1 \* (-1) \* -1 = 1 + 5 \* (-1)^3 \* det([[3, 1], [4, 2]]) = 5 \* (1) \* 2 = 10

det(A) = +2 \* (-1)^1 \* det([[1, 5], [2, 2]]) = 2 \* (1) \* -8 = -16 + 1 \* (-1)^2 \* det([[3, 5], [4, 2]]) = 1 \* (-1) \* -14 = 14 + 1 \* (-1)^3 \* det([[3, 1], [4, 2]]) = 1 \* (1) \* 2 = 2

det(A) = +1 \* (-1)^1 \* det([[1, 1, 5], [1, 5, 1], [2, 2, 1]]) = 1 \* (1) \* -36 = -36 + 5 \* (-1)^2 \* det([[2, 1, 5], [2, 5, 1], [1, 2, 1]]) = 5 \* (-1) \* 0 = 0 + 3 \* (-1)^3 \* det([[2, 1, 5], [2, 1, 1], [1, 2, 1]]) = 3 \* (1) \* 12 = 36 + 4 \* (-1)^4 \* det([[2, 1, 1], [2, 1, 5], [1, 2, 2]]) = 4 \* (-1) \* -12 = 48

det(A) = +1 \* (-1)^1 \* det([[5, 1], [2, 1]]) = 1 \* (1) \* 3 = 3 + 1 \* (-1)^2 \* det([[1, 1], [2, 1]]) = 1 \* (-1) \* -1 = 1 + 5 \* (-1)^3 \* det([[1, 5], [2, 2]]) = 5 \* (1) \* -8 = -40

det(A) = +2 \* (-1)^1 \* det([[5, 1], [2, 1]]) = 2 \* (1) \* 3 = 6 + 1 \* (-1)^2 \* det([[2, 1], [1, 1]]) = 1 \* (-1) \* 1 = -1 + 5 \* (-1)^3 \* det([[2, 5], [1, 2]]) = 5 \* (1) \* -1 = -5

det(A) = +2 \* (-1)^1 \* det([[1, 1], [2, 1]]) = 2 \* (1) \* -1 = -2 + 1 \* (-1)^2 \* det([[2, 1], [1, 1]]) = 1 \* (-1) \* 1 = -1 + 5 \* (-1)^3 \* det([[2, 1], [1, 2]]) = 5 \* (1) \* 3 = 15

det(A) = +2 \* (-1)^1 \* det([[1, 5], [2, 2]]) = 2 \* (1) \* -8 = -16 + 1 \* (-1)^2 \* det([[2, 5], [1, 2]]) = 1 \* (-1) \* -1 = 1 + 1 \* (-1)^3 \* det([[2, 1], [1, 2]]) = 1 \* (1) \* 3 = 3

det(A) = +1 \* (-1)^1 \* det([[2, 1, 5], [3, 5, 1], [4, 2, 1]]) = 1 \* (1) \* -63 = -63 + 3 \* (-1)^2 \* det([[2, 1, 5], [2, 5, 1], [1, 2, 1]]) = 3 \* (-1) \* 0 = 0 + 3 \* (-1)^3 \* det([[2, 2, 5], [2, 3, 1], [1, 4, 1]]) = 3 \* (1) \* 21 = 63 + 4 \* (-1)^4 \* det([[2, 2, 1], [2, 3, 5], [1, 4, 2]]) = 4 \* (-1) \* -21 = 84

det(A) = +2 \* (-1)^1 \* det([[5, 1], [2, 1]]) = 2 \* (1) \* 3 = 6 + 1 \* (-1)^2 \* det([[3, 1], [4, 1]]) = 1 \* (-1) \* -1 = 1 + 5 \* (-1)^3 \* det([[3, 5], [4, 2]]) = 5 \* (1) \* -14 = -70

det(A) = +2 \* (-1)^1 \* det([[5, 1], [2, 1]]) = 2 \* (1) \* 3 = 6 + 1 \* (-1)^2 \* det([[2, 1], [1, 1]]) = 1 \* (-1) \* 1 = -1 + 5 \* (-1)^3 \* det([[2, 5], [1, 2]]) = 5 \* (1) \* -1 = -5

det(A) = +2 \* (-1)^1 \* det([[3, 1], [4, 1]]) = 2 \* (1) \* -1 = -2 + 2 \* (-1)^2 \* det([[2, 1], [1, 1]]) = 2 \* (-1) \* 1 = -2 + 5 \* (-1)^3 \* det([[2, 3], [1, 4]]) = 5 \* (1) \* 5 = 25

det(A) = +2 \* (-1)^1 \* det([[3, 5], [4, 2]]) = 2 \* (1) \* -14 = -28 + 2 \* (-1)^2 \* det([[2, 5], [1, 2]]) = 2 \* (-1) \* -1 = 2 + 1 \* (-1)^3 \* det([[2, 3], [1, 4]]) = 1 \* (1) \* 5 = 5

det(A) = +1 \* (-1)^1 \* det([[2, 1, 5], [3, 1, 1], [4, 2, 1]]) = 1 \* (1) \* 9 = 9 + 3 \* (-1)^2 \* det([[2, 1, 5], [2, 1, 1], [1, 2, 1]]) = 3 \* (-1) \* 12 = -36 + 5 \* (-1)^3 \* det([[2, 2, 5], [2, 3, 1], [1, 4, 1]]) = 5 \* (1) \* 21 = 105 + 4 \* (-1)^4 \* det([[2, 2, 1], [2, 3, 1], [1, 4, 2]]) = 4 \* (-1) \* 3 = -12

det(A) = +2 \* (-1)^1 \* det([[1, 1], [2, 1]]) = 2 \* (1) \* -1 = -2 + 1 \* (-1)^2 \* det([[3, 1], [4, 1]]) = 1 \* (-1) \* -1 = 1 + 5 \* (-1)^3 \* det([[3, 1], [4, 2]]) = 5 \* (1) \* 2 = 10

det(A) = +2 \* (-1)^1 \* det([[1, 1], [2, 1]]) = 2 \* (1) \* -1 = -2 + 1 \* (-1)^2 \* det([[2, 1], [1, 1]]) = 1 \* (-1) \* 1 = -1 + 5 \* (-1)^3 \* det([[2, 1], [1, 2]]) = 5 \* (1) \* 3 = 15

det(A) = +2 \* (-1)^1 \* det([[3, 1], [4, 1]]) = 2 \* (1) \* -1 = -2 + 2 \* (-1)^2 \* det([[2, 1], [1, 1]]) = 2 \* (-1) \* 1 = -2 + 5 \* (-1)^3 \* det([[2, 3], [1, 4]]) = 5 \* (1) \* 5 = 25

det(A) = +2 \* (-1)^1 \* det([[3, 1], [4, 2]]) = 2 \* (1) \* 2 = 4 + 2 \* (-1)^2 \* det([[2, 1], [1, 2]]) = 2 \* (-1) \* 3 = -6 + 1 \* (-1)^3 \* det([[2, 3], [1, 4]]) = 1 \* (1) \* 5 = 5

det(A) = +1 \* (-1)^1 \* det([[2, 1, 1], [3, 1, 5], [4, 2, 2]]) = 1 \* (1) \* 0 = 0 + 3 \* (-1)^2 \* det([[2, 1, 1], [2, 1, 5], [1, 2, 2]]) = 3 \* (-1) \* -12 = 36 + 5 \* (-1)^3 \* det([[2, 2, 1], [2, 3, 5], [1, 4, 2]]) = 5 \* (1) \* -21 = -105 + 3 \* (-1)^4 \* det([[2, 2, 1], [2, 3, 1], [1, 4, 2]]) = 3 \* (-1) \* 3 = -9

det(A) = +2 \* (-1)^1 \* det([[1, 5], [2, 2]]) = 2 \* (1) \* -8 = -16 + 1 \* (-1)^2 \* det([[3, 5], [4, 2]]) = 1 \* (-1) \* -14 = 14 + 1 \* (-1)^3 \* det([[3, 1], [4, 2]]) = 1 \* (1) \* 2 = 2

det(A) = +2 \* (-1)^1 \* det([[1, 5], [2, 2]]) = 2 \* (1) \* -8 = -16 + 1 \* (-1)^2 \* det([[2, 5], [1, 2]]) = 1 \* (-1) \* -1 = 1 + 1 \* (-1)^3 \* det([[2, 1], [1, 2]]) = 1 \* (1) \* 3 = 3

det(A) = +2 \* (-1)^1 \* det([[3, 5], [4, 2]]) = 2 \* (1) \* -14 = -28 + 2 \* (-1)^2 \* det([[2, 5], [1, 2]]) = 2 \* (-1) \* -1 = 2 + 1 \* (-1)^3 \* det([[2, 3], [1, 4]]) = 1 \* (1) \* 5 = 5

det(A) = +2 \* (-1)^1 \* det([[3, 1], [4, 2]]) = 2 \* (1) \* 2 = 4 + 2 \* (-1)^2 \* det([[2, 1], [1, 2]]) = 2 \* (-1) \* 3 = -6 + 1 \* (-1)^3 \* det([[2, 3], [1, 4]]) = 1 \* (1) \* 5 = 5

Determinan matriks A adalah 120