# **Oiulin Fan**

## ma217-w24 Assignment readQ6-2 due 03/29/2024 at 08:01am EDT

#### Problem 1. (1 point)

Suppose that for a matrix A we know that det(A) = 12.

(a) If 
$$B = A^T$$
, what is  $det(B)$ ?  $det(B) = \underline{\hspace{1cm}}$ 

**(b)** If *B* is obtained by swapping rows 2 and 3; and 3 and 4 of *A*, what is det(B)?

$$det(B) = \underline{\hspace{1cm}}$$

(c) If B is obtained from A by multiplying row 4 of A by 4 and then adding 7 times that row to row 5, what is det(B)?

$$det(B) = \underline{\hspace{1cm}}$$

Answer(s) submitted:

- 12
- 12
- 48

submitted: (correct) recorded: (correct)

#### Problem 2. (1 point)

For what value of k is the matrix

$$A = \begin{bmatrix} 2 & 2 & 3 \\ 3 & k & 1 \\ 0 & 0 & 3 \end{bmatrix}$$

not invertible?

k =\_\_\_

Answer(s) submitted:

• 3

submitted: (correct) recorded: (correct)

### Problem 3. (1 point)

If A and B are  $n \times n$  matrices with det(A) = 8 and det(B) = 9, calculate each of the following determinants.

(a) 
$$\det(AB) =$$
\_\_\_\_

**(b)** 
$$\det(B^3) =$$
\_\_\_\_

(c) 
$$det(A^{-1}) = \underline{\hspace{1cm}}$$
  
Answer(s) submitted:

- 72
- 729

submitted: (correct) recorded: (correct)

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