Group: _____   Present:_____

1. Use cofactor expansion to find the determinant of the matrix

$$A = \begin{pmatrix} 4 & -2 & 3 \\ 1 & -2 & 2 \\ 0 & 1 & 5 \end{pmatrix}$$

(Don't use the formula you may have learned in Calculus or another class - use cofactor expansion!)

2. Find the determinant of $A = \begin{pmatrix} 2 & -1 \\ 1 & 3 \end{pmatrix}$

$\det(A) = $ _____

Predict the determinant of the following matrices by noting how they are related to A, and then check by computing the determinants.

$B = \begin{pmatrix} 4 & -2 \\ 1 & 3 \end{pmatrix}$ Prediction for $\det(B)$: _____   Compute: $\det(B) = $ _____

$C = \begin{pmatrix} 4 & -2 \\ 2 & 6 \end{pmatrix}$ Prediction for $\det(C)$: _____   Compute: $\det(C) = $ _____

Let $D = \begin{pmatrix} 2 & -1 \\ 2 & -3 \end{pmatrix}$. Compute: $\det(D) = $ _____

Let $E = \begin{pmatrix} 2 & -1 \\ 3 & 0 \end{pmatrix}$. Prediction for $\det(E)$: _____   Compute: $\det(E) = $ _____

(How is E related to A and D?)

3. $\det \begin{pmatrix} 1 & 2 & 7 & 8 & 9 \\ 0 & 3 & 10 & -15 & 64 \\ 0 & 0 & 5 & -6 & 12 \\ 0 & 0 & 0 & 6 & 101 \\ 0 & 0 & 0 & 0 & -1 \end{pmatrix} = $ _____ = _____