

Evaluate the determinant and find the inverse for each matrix for #1-8.

$$1.) A = \begin{bmatrix} 3 & -4 \\ 2 & -2 \end{bmatrix} \quad -6 - -8$$

$$2.) B = \begin{bmatrix} -6 & -4 \\ 5 & 3 \end{bmatrix} \quad -18 - -20$$

$$|A|: \underline{2}$$

$$|B|: \underline{2}$$

Inverse:

Inverse:

$$\begin{bmatrix} -1 & 2 \\ -1 & 1.5 \end{bmatrix}$$

$$\begin{bmatrix} 1.5 & 2 \\ -2.5 & -3 \end{bmatrix}$$

$$3.) C = \begin{bmatrix} 4 & 2 \\ 16 & 8 \end{bmatrix} \quad 32 - 32$$

$$4.) D = \begin{bmatrix} 3 & 4 \\ -5 & -7 \end{bmatrix} \quad -21 - -20$$

$$|C|: \underline{0}$$

$$|D|: \underline{-1}$$

Inverse:

Inverse:

$$\begin{bmatrix} 7 & 4 \\ -5 & -3 \end{bmatrix}$$

$$5.) E = \begin{bmatrix} 5 & -5 \\ 3 & 4 \end{bmatrix} \quad 20 - -15$$

$$6.) F = \begin{bmatrix} -1 & 4 \\ 2 & -3 \end{bmatrix} \quad 3 - 8$$

$$|E|: \underline{35}$$

$$|F|: \underline{-5}$$

Inverse:

Inverse:

$$\begin{bmatrix} .114 & .143 \\ -.086 & .143 \end{bmatrix}$$

$$\begin{bmatrix} .6 & .8 \\ .4 & .2 \end{bmatrix}$$

7.) Evaluate: $-4 \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} + 3 \begin{bmatrix} 5 & 2 \\ -2 & 6 \end{bmatrix} =$

$$\begin{bmatrix} -4 & -8 \\ -12 & -16 \end{bmatrix} + \begin{bmatrix} 15 & 6 \\ -6 & 18 \end{bmatrix} = \begin{bmatrix} 11 & -2 \\ -18 & 2 \end{bmatrix}$$

8.) Solve for the missing variables: $\begin{bmatrix} -x+2 & 3 \\ 4 & x+y \end{bmatrix} = \begin{bmatrix} -5 & 2z-5 \\ 4 & 2 \end{bmatrix}$

$$-x+2 = -5 \quad 3 = 2z-5$$

$$-x = -7$$

$$8 = 2z$$

$$\boxed{x = 7}$$

$$\boxed{4 = z}$$

$$x+y = 2$$

$$7+y = 2$$

$$\boxed{y = -5}$$

Find the indicated matrix for #9-12.

9.) $\begin{bmatrix} 8 & -8 \\ 6 & -10 \end{bmatrix} = [C] + \begin{bmatrix} 3 & -9 \\ 6 & -4 \end{bmatrix}$

$$\begin{bmatrix} 8 & -8 \\ 6 & -10 \end{bmatrix} - \begin{bmatrix} 3 & -9 \\ 6 & -4 \end{bmatrix} = [C]$$

[C] = $\underline{\underline{\begin{bmatrix} 5 & 1 \\ 0 & -6 \end{bmatrix}}}$

10.) $\begin{bmatrix} 6 \\ 20 \end{bmatrix} = -2[P]$
 $\div -2 \quad \underline{\underline{-2}}$

[P] = $\underline{\underline{\begin{bmatrix} -3 \\ -10 \end{bmatrix}}}$

11.) $\begin{bmatrix} 5 & 2 & -5 \end{bmatrix} = \begin{bmatrix} 9 & 9 & -3 \end{bmatrix} - [B]$

$$\begin{bmatrix} 5 & 2 & -5 \end{bmatrix} - \begin{bmatrix} 9 & 9 & -3 \end{bmatrix} = -[B]$$

$$\underline{\underline{\begin{bmatrix} -4 & -7 & -2 \end{bmatrix}}} = \underline{\underline{\begin{bmatrix} -[B] \end{bmatrix}}}$$

[B] = $\underline{\underline{\begin{bmatrix} 4 & 7 & 2 \end{bmatrix}}}$

12.) $\frac{2[X]}{2} = \frac{\begin{bmatrix} -10 & -10 \end{bmatrix}}{2}$

[X] = $\underline{\underline{\begin{bmatrix} -5 & -5 \end{bmatrix}}}$

Given the matrices below, perform the indicated operation(s), if possible.

$$A = \begin{bmatrix} 2 & 4 \\ 3 & -1 \end{bmatrix}$$

$$B = \begin{bmatrix} 3 & -2 & 7 \\ 6 & 0 & -5 \end{bmatrix}$$

$$C = \begin{bmatrix} 1 \\ 0 \end{bmatrix}$$

$$D = [-4 \ 9]$$

$$E = [x]$$

$$F = \begin{bmatrix} -6 & 4 \\ -2 & 8 \\ 3 & 0 \end{bmatrix}$$

$$G = \begin{bmatrix} 0 & -1 \\ -2 & 1 \end{bmatrix}$$

$$H = \begin{bmatrix} 0 & 1 & 2 \\ 4 & 5 & 6 \\ -2 & -1 & 0 \end{bmatrix}$$

$$I = \begin{bmatrix} 1 & -4 & 7 \\ 3 & 6 & 9 \\ 8 & 0 & 2 \end{bmatrix}$$

$$K = \begin{bmatrix} -1 \\ 0 \\ 3 \end{bmatrix}$$

13.) $3G - A$

$$\begin{bmatrix} -2 & -7 \\ -9 & 4 \end{bmatrix}$$

14.) AK

DNE

15.) $3F$

$$\begin{bmatrix} -18 & 12 \\ -6 & 24 \\ 9 & 0 \end{bmatrix}$$

16.) $\frac{1}{2}H$

$$\begin{bmatrix} 0 & .5 & 1 \\ 2 & 2.5 & 3 \\ -1 & -.5 & 0 \end{bmatrix}$$

17.) HI

$$\begin{bmatrix} 19 & 6 & 13 \\ 67 & 14 & 85 \\ -5 & 2 & -23 \end{bmatrix}$$

18.) BF

$$\begin{bmatrix} 7 & -4 \\ -51 & 24 \end{bmatrix}$$