

Pre-Calculus Homework #16

- 1) Find $\csc 15^\circ$ exactly.
- 2) Find all of the exact solutions to $2\cos\theta + 2\sin\theta = \sqrt{2}$ on the interval $0 \leq \theta < 360^\circ$ and write all of your answer in degrees.
- 3) Find $\sec \frac{3\pi}{8}$ exactly.
- 4) Find all of the exact solutions to $\csc^2\theta - 2\cot^2\theta = 0$ on the interval $0 \leq \theta < 2\pi$ and write all of your answer in radians.
- 5) Find the exact values of $\sin 2\theta$, $\cos 2\theta$, and $\tan 2\theta$ and find the quadrant in which 2θ lies if $\sin\theta = \frac{-5}{13}$, and θ lies in quadrant IV

6) If possible, find $4B + 5A$, $2A - 3B$, AB , and BA if $A = \begin{bmatrix} -5 & 4 \\ 0 & -8 \end{bmatrix}$ and $B = \begin{bmatrix} 7 & -9 \\ -6 & 0 \end{bmatrix}$

7) Find both the determinant and inverse of both $A = \begin{bmatrix} 4 & -7 \\ -3 & 8 \end{bmatrix}$ and $B = \begin{bmatrix} -6 & 2 \\ -9 & 13 \end{bmatrix}$

- 8) If possible, find $-3B$, $4A - B$, AB , and BA if

$$A = \begin{bmatrix} 5 & -8 & 4 \\ 7 & -2 & -1 \\ -4 & 6 & 0 \end{bmatrix} \text{ and } B = \begin{bmatrix} 2 & -1 & -5 \\ 0 & -6 & 3 \\ 4 & 9 & -2 \end{bmatrix}$$

9) Find the determinant of A , or $|A|$, if $A = \begin{bmatrix} -6 & 4 & -5 \\ -8 & 2 & 3 \\ 1 & -9 & -7 \end{bmatrix}$

10) Find, if it exists, the inverse of A , or A^{-1} , if $A = \begin{bmatrix} 2 & 3 & 2 \\ 3 & 3 & 4 \\ -1 & -1 & -2 \end{bmatrix}$ and check your answers

by finding $A^{-1}A$ and AA^{-1}

11) If possible, find $2B+5A$, $-4A$, AB , and BA if

$$A = \begin{bmatrix} -7 & 9 & 0 & -2 \\ 3 & 8 & 5 & -4 \\ -6 & 2 & -1 & 4 \end{bmatrix} \text{ and } B = \begin{bmatrix} -5 & 4 & -2 \\ 0 & -3 & 6 \\ -8 & -1 & 7 \\ -7 & 9 & 5 \end{bmatrix}$$

12) Find the determinant of A , or $|A|$, if $A = \begin{bmatrix} 4 & -3 & 6 \\ 5 & -1 & -8 \\ -9 & 7 & 2 \end{bmatrix}$

13) Find, if it exists, the inverse of A , or A^{-1} , if $A = \begin{bmatrix} -2 & 5 & 3 \\ 4 & -1 & 3 \\ 7 & -2 & 5 \end{bmatrix}$ and check your answers
by finding $A^{-1}A$ and AA^{-1}

14) If possible, find $2B$, $6A+B$, AB , and BA if $A = \begin{bmatrix} 8 & -2 & 4 & -6 & -4 \\ -3 & 6 & 9 & 7 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 7 & -9 \\ 4 & 3 \\ -6 & 1 \\ 2 & -5 \end{bmatrix}$

15) Find the determinant of A , or $|A|$, if $A = \begin{bmatrix} 7 & 6 & -2 \\ -9 & 0 & 3 \\ 5 & -1 & -4 \end{bmatrix}$

16) Find, if it exists, the inverse of A , or A^{-1} , if $A = \begin{bmatrix} 1 & -14 & 7 & 38 \\ -1 & 2 & 1 & -2 \\ 1 & 2 & -1 & -6 \\ 1 & -2 & 3 & 6 \end{bmatrix}$ and check your
answers by finding $A^{-1}A$ and AA^{-1}

17) If possible, find $4B+6A$, $3A-2B$, AB , and BA if

$$A = \begin{bmatrix} -5 & 4 & 9 & -1 \\ -7 & 0 & -8 & 6 \\ 2 & -3 & -4 & 5 \\ 6 & -9 & 3 & 0 \end{bmatrix} \text{ and } B = \begin{bmatrix} 0 & 7 & -8 & 4 \\ -6 & 9 & -3 & 0 \\ -1 & 6 & -4 & -2 \\ -5 & -3 & 2 & 5 \end{bmatrix}$$

18) Find the determinant of A , or $|A|$, if $A = \begin{bmatrix} -1 & 6 & -4 \\ 3 & 6 & 5 \\ 1 & -3 & 5 \\ 6 & 4 & 2 \\ 1 & 0 & -2 \\ 2 & 2 & 3 \end{bmatrix}$

19) Find, if it exists, the inverse of A , or A^{-1} , if $A = \begin{bmatrix} 10 & 20 & -30 & 15 \\ 3 & -7 & 14 & -8 \\ -7 & -2 & -1 & 2 \\ 4 & 4 & -3 & -1 \end{bmatrix}$ and check your answers by finding $A^{-1}A$ and AA^{-1}

20) If possible, find $8B-3A$, $-7A$, AB , and BA if

$$A = \begin{bmatrix} 5 & 0 & -3 \\ 9 & -7 & 2 \\ -8 & 1 & 4 \\ -5 & 6 & 0 \\ 2 & -1 & -4 \end{bmatrix} \text{ and } B = \begin{bmatrix} -6 & -1 & 7 & 5 \\ 3 & -5 & 0 & -4 \\ -2 & 4 & -8 & -3 \\ 1 & -7 & 2 & 6 \end{bmatrix}$$