



Math worksheet on 'Matrices - Create Augmented Matrix (3x3) (Level 1)'. Part of a broader unit on 'Matrices'

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1 Created an augmented matrix from this matrix to start the process of inverting it

$$\begin{bmatrix} 1 & 1 & 9 \\ 1 & 3 & 8 \\ 8 & 5 & 7 \end{bmatrix}$$

<b>a</b>	<b>b</b>
$\begin{bmatrix} 0 & 0 & 1 &   & 1 & 1 & 9 \\ 0 & 1 & 0 &   & 1 & 3 & 8 \\ 1 & 0 & 0 &   & 8 & 5 & 7 \end{bmatrix}$	$\begin{bmatrix} 1 & 1 & 9 &   & 0 & 0 & 1 \\ 1 & 3 & 8 &   & 0 & 1 & 0 \\ 8 & 5 & 7 &   & 1 & 0 & 0 \end{bmatrix}$
<b>c</b>	<b>d</b>
$\begin{bmatrix} 0 & 0 & 0 &   & 1 & 1 & 9 \\ 0 & 0 & 0 &   & 1 & 3 & 8 \\ 0 & 0 & 0 &   & 8 & 5 & 7 \end{bmatrix}$	$\begin{bmatrix} 1 & 1 & 9 &   & 1 & 1 & 1 \\ 1 & 3 & 8 &   & 1 & 1 & 1 \\ 8 & 5 & 7 &   & 1 & 1 & 1 \end{bmatrix}$
<b>e</b>	<b>f</b>
$\begin{bmatrix} 1 & 1 & 9 &   & 0 & 0 & 0 \\ 1 & 3 & 8 &   & 0 & 0 & 0 \\ 8 & 5 & 7 &   & 0 & 0 & 0 \end{bmatrix}$	$\begin{bmatrix} 1 & 1 & 9 &   & 1 & 0 & 0 \\ 1 & 3 & 8 &   & 0 & 1 & 0 \\ 8 & 5 & 7 &   & 0 & 0 & 1 \end{bmatrix}$

2 Created an augmented matrix from this matrix to start the process of inverting it

$$\begin{bmatrix} 6 & 4 & 5 \\ 2 & 0 & 2 \\ 3 & 0 & 8 \end{bmatrix}$$

<b>a</b>	<b>b</b>
$\begin{bmatrix} 6 & 4 & 5 &   & 0 & 0 & 1 \\ 2 & 0 & 2 &   & 0 & 1 & 0 \\ 3 & 0 & 8 &   & 1 & 0 & 0 \end{bmatrix}$	$\begin{bmatrix} 0 & 0 & 1 &   & 6 & 4 & 5 \\ 0 & 1 & 0 &   & 2 & 0 & 2 \\ 1 & 0 & 0 &   & 3 & 0 & 8 \end{bmatrix}$
<b>c</b>	<b>d</b>
<i>undefined</i>	$\begin{bmatrix} 6 & 4 & 5 &   & 1 & 0 & 0 \\ 2 & 0 & 2 &   & 0 & 1 & 0 \\ 3 & 0 & 8 &   & 0 & 0 & 1 \end{bmatrix}$
<b>e</b>	<b>f</b>
$\begin{bmatrix} 1 & 0 & 0 &   & 6 & 4 & 5 \\ 0 & 1 & 0 &   & 2 & 0 & 2 \\ 0 & 0 & 1 &   & 3 & 0 & 8 \end{bmatrix}$	$\begin{bmatrix} 1 & 1 & 1 &   & 6 & 4 & 5 \\ 1 & 1 & 1 &   & 2 & 0 & 2 \\ 1 & 1 & 1 &   & 3 & 0 & 8 \end{bmatrix}$

3 Created an augmented matrix from this matrix to start the process of inverting it

$$\begin{bmatrix} 8 & 2 & 8 \\ 6 & 3 & 6 \\ 3 & 3 & 0 \end{bmatrix}$$

<b>a</b>	<b>b</b>
$\begin{bmatrix} 0 & 0 & 0 &   & 8 & 2 & 8 \\ 0 & 0 & 0 &   & 6 & 3 & 6 \\ 0 & 0 & 0 &   & 3 & 3 & 0 \end{bmatrix}$	$\begin{bmatrix} 0 & 0 & 1 &   & 8 & 2 & 8 \\ 0 & 1 & 0 &   & 6 & 3 & 6 \\ 1 & 0 & 0 &   & 3 & 3 & 0 \end{bmatrix}$
<b>c</b>	<b>d</b>
$\begin{bmatrix} 8 & 2 & 8 &   & 1 & 0 & 0 \\ 6 & 3 & 6 &   & 0 & 1 & 0 \\ 3 & 3 & 0 &   & 0 & 0 & 1 \end{bmatrix}$	$\begin{bmatrix} 8 & 2 & 8 &   & 0 & 0 & 0 \\ 6 & 3 & 6 &   & 0 & 0 & 0 \\ 3 & 3 & 0 &   & 0 & 0 & 0 \end{bmatrix}$
<b>e</b>	<b>f</b>
$\begin{bmatrix} 8 & 2 & 8 &   & 1 & 1 & 1 \\ 6 & 3 & 6 &   & 1 & 1 & 1 \\ 3 & 3 & 0 &   & 1 & 1 & 1 \end{bmatrix}$	$\begin{bmatrix} 8 & 2 & 8 &   & 0 & 0 & 1 \\ 6 & 3 & 6 &   & 0 & 1 & 0 \\ 3 & 3 & 0 &   & 1 & 0 & 0 \end{bmatrix}$

4 Created an augmented matrix from this matrix to start the process of inverting it

$$\begin{bmatrix} 0 & 6 & 8 \\ 0 & 4 & 2 \\ 4 & 6 & 6 \end{bmatrix}$$

<b>a</b>	<b>b</b>
$\begin{bmatrix} 0 & 0 & 0 &   & 0 & 6 & 8 \\ 0 & 0 & 0 &   & 0 & 4 & 2 \\ 0 & 0 & 0 &   & 4 & 6 & 6 \end{bmatrix}$	$\begin{bmatrix} 0 & 6 & 8 &   & 1 & 0 & 0 \\ 0 & 4 & 2 &   & 0 & 1 & 0 \\ 4 & 6 & 6 &   & 0 & 0 & 1 \end{bmatrix}$
<b>c</b>	<b>d</b>
$\begin{bmatrix} 0 & 6 & 8 &   & 0 & 0 & 1 \\ 0 & 4 & 2 &   & 0 & 1 & 0 \\ 4 & 6 & 6 &   & 1 & 0 & 0 \end{bmatrix}$	<i>undefined</i>
<b>e</b>	<b>f</b>
$\begin{bmatrix} 1 & 1 & 1 &   & 0 & 6 & 8 \\ 1 & 1 & 1 &   & 0 & 4 & 2 \\ 1 & 1 & 1 &   & 4 & 6 & 6 \end{bmatrix}$	$\begin{bmatrix} 0 & 6 & 8 &   & 0 & 0 & 0 \\ 0 & 4 & 2 &   & 0 & 0 & 0 \\ 4 & 6 & 6 &   & 0 & 0 & 0 \end{bmatrix}$

5 Created an augmented matrix from this matrix to start the process of inverting it

$$\begin{bmatrix} 8 & 2 & 0 \\ 4 & 0 & 5 \\ 1 & 9 & 6 \end{bmatrix}$$

<b>a</b>	<b>b</b>
$\begin{bmatrix} 8 & 2 & 0 &   & 1 & 0 & 0 \\ 4 & 0 & 5 &   & 0 & 1 & 0 \\ 1 & 9 & 6 &   & 0 & 0 & 1 \end{bmatrix}$	$\begin{bmatrix} 8 & 2 & 0 &   & 0 & 0 & 1 \\ 4 & 0 & 5 &   & 0 & 1 & 0 \\ 1 & 9 & 6 &   & 1 & 0 & 0 \end{bmatrix}$
<b>c</b>	<b>d</b>
$\begin{bmatrix} 8 & 2 & 0 &   & 0 & 0 & 0 \\ 4 & 0 & 5 &   & 0 & 0 & 0 \\ 1 & 9 & 6 &   & 0 & 0 & 0 \end{bmatrix}$	$\begin{bmatrix} 0 & 0 & 1 &   & 8 & 2 & 0 \\ 0 & 1 & 0 &   & 4 & 0 & 5 \\ 1 & 0 & 0 &   & 1 & 9 & 6 \end{bmatrix}$
<b>e</b>	<b>f</b>
$\begin{bmatrix} 1 & 1 & 1 &   & 8 & 2 & 0 \\ 1 & 1 & 1 &   & 4 & 0 & 5 \\ 1 & 1 & 1 &   & 1 & 9 & 6 \end{bmatrix}$	<i>undefined</i>

6 Created an augmented matrix from this matrix to start the process of inverting it

$$\begin{bmatrix} 2 & 8 & 5 \\ 2 & 0 & 5 \\ 2 & 7 & 7 \end{bmatrix}$$

<b>a</b>	<b>b</b>
<i>undefined</i>	$\begin{bmatrix} 2 & 8 & 5 &   & 0 & 0 & 1 \\ 2 & 0 & 5 &   & 0 & 1 & 0 \\ 2 & 7 & 7 &   & 1 & 0 & 0 \end{bmatrix}$
<b>c</b>	<b>d</b>
$\begin{bmatrix} 1 & 0 & 0 &   & 2 & 8 & 5 \\ 0 & 1 & 0 &   & 2 & 0 & 5 \\ 0 & 0 & 1 &   & 2 & 7 & 7 \end{bmatrix}$	$\begin{bmatrix} 1 & 1 & 1 &   & 2 & 8 & 5 \\ 1 & 1 & 1 &   & 2 & 0 & 5 \\ 1 & 1 & 1 &   & 2 & 7 & 7 \end{bmatrix}$
<b>e</b>	<b>f</b>
$\begin{bmatrix} 0 & 0 & 0 &   & 2 & 8 & 5 \\ 0 & 0 & 0 &   & 2 & 0 & 5 \\ 0 & 0 & 0 &   & 2 & 7 & 7 \end{bmatrix}$	$\begin{bmatrix} 2 & 8 & 5 &   & 1 & 0 & 0 \\ 2 & 0 & 5 &   & 0 & 1 & 0 \\ 2 & 7 & 7 &   & 0 & 0 & 1 \end{bmatrix}$

7 Created an augmented matrix from this matrix to start the process of inverting it

$$\begin{bmatrix} 5 & 5 & 1 \\ 5 & 4 & 4 \\ 2 & 2 & 8 \end{bmatrix}$$

<b>a</b>	<b>b</b>
$\begin{bmatrix} 5 & 5 & 1 &   & 0 & 0 & 1 \\ 5 & 4 & 4 &   & 0 & 1 & 0 \\ 2 & 2 & 8 &   & 1 & 0 & 0 \end{bmatrix}$	$\begin{bmatrix} 5 & 5 & 1 &   & 1 & 1 & 1 \\ 5 & 4 & 4 &   & 1 & 1 & 1 \\ 2 & 2 & 8 &   & 1 & 1 & 1 \end{bmatrix}$
<b>c</b>	<b>d</b>
$\begin{bmatrix} 5 & 5 & 1 &   & 1 & 0 & 0 \\ 5 & 4 & 4 &   & 0 & 1 & 0 \\ 2 & 2 & 8 &   & 0 & 0 & 1 \end{bmatrix}$	$\begin{bmatrix} 0 & 0 & 1 &   & 5 & 5 & 1 \\ 0 & 1 & 0 &   & 5 & 4 & 4 \\ 1 & 0 & 0 &   & 2 & 2 & 8 \end{bmatrix}$
<b>e</b>	<b>f</b>
$\begin{bmatrix} 1 & 0 & 0 &   & 5 & 5 & 1 \\ 0 & 1 & 0 &   & 5 & 4 & 4 \\ 0 & 0 & 1 &   & 2 & 2 & 8 \end{bmatrix}$	<i>undefined</i>