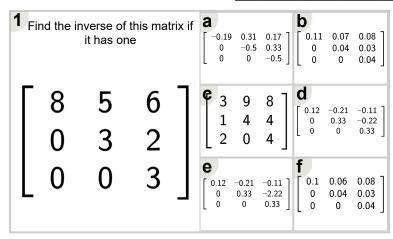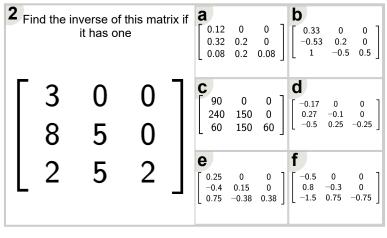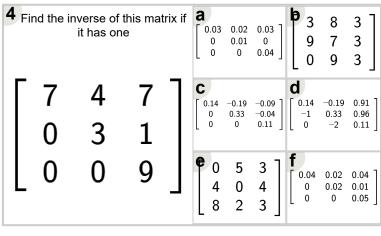# mobius

Math worksheet on *'Matrices - Find Inverse Triangular Matrix (3x3) (Level 1)'*. Part of a broader unit on *'Matrices'*

Learn online: app.mobius.academy/math/units/matrices/

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1 Find the inverse of this matrix if it has one

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

a
$$\begin{bmatrix} -0.19 & 0.31 & 0.17 \\ 0 & -0.5 & 0.33 \\ 0 & 0 & -0.5 \end{bmatrix}$$

b
$$\begin{bmatrix} 0.11 & 0.07 & 0.08 \\ 0 & 0.04 & 0.03 \\ 0 & 0 & 0.04 \end{bmatrix}$$

c
$$\begin{bmatrix} 3 & 9 & 8 \\ 1 & 4 & 4 \\ 2 & 0 & 4 \end{bmatrix}$$

d
$$\begin{bmatrix} 0.12 & -0.21 & -0.11 \\ 0 & 0.33 & -0.22 \\ 0 & 0 & 0.33 \end{bmatrix}$$

e
$$\begin{bmatrix} 0.12 & -0.21 & -0.11 \\ 0 & 0.33 & -2.22 \\ 0 & 0 & 0.33 \end{bmatrix}$$

f
$$\begin{bmatrix} 0.1 & 0.06 & 0.08 \\ 0 & 0.04 & 0.03 \\ 0 & 0 & 0.04 \end{bmatrix}$$

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2 Find the inverse of this matrix if it has one

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

a
$$\begin{bmatrix} 0.12 & 0 & 0 \\ 0.32 & 0.2 & 0 \\ 0.08 & 0.2 & 0.08 \end{bmatrix}$$

b
$$\begin{bmatrix} 0.33 & 0 & 0 \\ -0.53 & 0.2 & 0 \\ 1 & -0.5 & 0.5 \end{bmatrix}$$

c
$$\begin{bmatrix} 90 & 0 & 0 \\ 240 & 150 & 0 \\ 60 & 150 & 60 \end{bmatrix}$$

d
$$\begin{bmatrix} -0.17 & 0 & 0 \\ 0.27 & -0.1 & 0 \\ -0.5 & 0.25 & -0.25 \end{bmatrix}$$

e
$$\begin{bmatrix} 0.25 & 0 & 0 \\ -0.4 & 0.15 & 0 \\ 0.75 & -0.38 & 0.38 \end{bmatrix}$$

f
$$\begin{bmatrix} -0.5 & 0 & 0 \\ 0.8 & -0.3 & 0 \\ -1.5 & 0.75 & -0.75 \end{bmatrix}$$

---

3 Find the inverse of this matrix if it has one

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

a
$$\begin{bmatrix} 0.03 & 0.04 & 0.03 \\ 0 & 0.03 & 0.04 \\ 0 & 0 & 0.07 \end{bmatrix}$$

b
$$\begin{bmatrix} 0 & 9 & 1 \\ 8 & 4 & 5 \\ 9 & 8 & 3 \end{bmatrix}$$

c
$$\begin{bmatrix} -0.19 & 0.23 & -0.05 \\ 0 & -0.19 & 0.12 \\ 0 & 0 & -0.09 \end{bmatrix}$$

d
$$\begin{bmatrix} 0.25 & -0.31 & 0.07 \\ 0 & 0.25 & -0.16 \\ 0 & 0 & 0.12 \end{bmatrix}$$

e
$$\begin{bmatrix} 0.03 & 0.04 & 0.03 \\ 0 & 0.03 & 0.04 \\ 0 & 0 & 0.06 \end{bmatrix}$$

f
$$\begin{bmatrix} 0.06 & -0.08 & 0.02 \\ 0 & 0.06 & -0.04 \\ 0 & 0 & 0.03 \end{bmatrix}$$

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4 Find the inverse of this matrix if it has one

$$\begin{bmatrix} 7 & 4 & 7 \\ 0 & 3 & 1 \\ 0 & 0 & 9 \end{bmatrix}$$

a
$$\begin{bmatrix} 0.03 & 0.02 & 0.03 \\ 0 & 0.01 & 0 \\ 0 & 0 & 0.04 \end{bmatrix}$$

b
$$\begin{bmatrix} 3 & 8 & 3 \\ 9 & 7 & 3 \\ 0 & 9 & 3 \end{bmatrix}$$

c
$$\begin{bmatrix} 0.14 & -0.19 & -0.09 \\ 0 & 0.33 & -0.04 \\ 0 & 0 & 0.11 \end{bmatrix}$$

d
$$\begin{bmatrix} 0.14 & -0.19 & 0.91 \\ -1 & 0.33 & 0.96 \\ 0 & -2 & 0.11 \end{bmatrix}$$

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

f
$$\begin{bmatrix} 0.04 & 0.02 & 0.04 \\ 0 & 0.02 & 0.01 \\ 0 & 0 & 0.05 \end{bmatrix}$$

---

5 Find the inverse of this matrix if it has one

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

a
$$\begin{bmatrix} 0.17 & -0.08 & 0 \\ 0 & 0.19 & -0.15 \\ 0 & 0 & 0.3 \end{bmatrix}$$

b
$$\begin{bmatrix} 0.06 & -0.03 & 0 \\ 0 & 0.06 & -0.05 \\ 0 & 0 & 0.1 \end{bmatrix}$$

c
$$\begin{bmatrix} 0.19 & -0.1 & 0 \\ 0 & 0.22 & -0.18 \\ 0 & 0 & 0.35 \end{bmatrix}$$

d
$$\begin{bmatrix} 0.03 & 0.01 & 0.01 \\ 0 & 0.02 & 0.01 \\ 0 & 0 & 0.01 \end{bmatrix}$$

e
undefined

f
$$\begin{bmatrix} 0.11 & -0.06 & 0 \\ 0 & 0.12 & -0.1 \\ 0 & 0 & 0.2 \end{bmatrix}$$

---

6 Find the inverse of this matrix if it has one

$$\begin{bmatrix} 6 & 8 & 7 \\ 0 & 7 & 1 \\ 0 & 0 & 6 \end{bmatrix}$$

a
$$\begin{bmatrix} 0.33 & -0.38 & -0.33 \\ 0 & 0.29 & -0.05 \\ 0 & 0 & 0.33 \end{bmatrix}$$

b
undefined

c
$$\begin{bmatrix} 0.02 & 0.03 & 0.03 \\ 0 & 0.03 & 0 \\ 0 & 0 & 0.02 \end{bmatrix}$$

d
$$\begin{bmatrix} 1,512 & 2,016 & 1,764 \\ 0 & 1,764 & 252 \\ 0 & 0 & 1,512 \end{bmatrix}$$

e
$$\begin{bmatrix} 0.17 & -0.19 & -0.16 \\ 0 & 0.14 & -0.02 \\ 0 & 0 & 0.17 \end{bmatrix}$$

f
$$\begin{bmatrix} 8 & 9 & 1 \\ 7 & 5 & 9 \\ 2 & 3 & 9 \end{bmatrix}$$

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7 Find the inverse of this matrix if it has one

$$\begin{bmatrix} 6 & 3 & 2 \\ 0 & 6 & 8 \\ 0 & 0 & 1 \end{bmatrix}$$

a
$$\begin{bmatrix} -0.33 & 0.17 & -0.67 \\ 0 & -0.33 & 2.67 \\ 0 & 0 & -2 \end{bmatrix}$$

b
undefined

c
$$\begin{bmatrix} 0.17 & -0.08 & 0.33 \\ 0 & 0.17 & -1.33 \\ 0 & 0 & 1 \end{bmatrix}$$

d
$$\begin{bmatrix} 7 & 6 & 7 \\ 2 & 1 & 8 \\ 4 & 5 & 2 \end{bmatrix}$$

e
$$\begin{bmatrix} -0.08 & 0.04 & -0.17 \\ 0 & -0.08 & 0.67 \\ 0 & 0 & -0.5 \end{bmatrix}$$

f
$$\begin{bmatrix} -0.04 & 0.02 & -0.08 \\ 0 & -0.04 & 0.33 \\ 0 & 0 & -0.25 \end{bmatrix}$$