

Operations on Matrices

INFORMATION TIME

1. Work each exercise.
2. Shade in the block that contains the answer.
3. Find the answer to the question in the unshaded blocks.

Use these matrices for the exercises below.

$$A = \begin{bmatrix} 2 & 3 \\ 4 & -1 \end{bmatrix} \quad B = \begin{bmatrix} -2 & 3 \\ 1 & 1 \end{bmatrix} \quad C = \begin{bmatrix} -1 & 2 \\ 2 & 1 \end{bmatrix} \quad D = \begin{bmatrix} -4 & 5 \\ 1 & -6 \end{bmatrix} \quad E = \begin{bmatrix} 2 & 2 \\ 2 & 2 \end{bmatrix}$$

$$F = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 0 & 1 & 2 \end{bmatrix} \quad G = \begin{bmatrix} -1 & 0 & 4 \\ 1 & 1 & 6 \\ 2 & -3 & 3 \end{bmatrix} \quad H = \begin{bmatrix} 8 & -5 & 3 \\ 7 & 1 & -2 \\ -6 & -1 & 4 \end{bmatrix}$$

Exercises

Add.

1. $A + C = \begin{bmatrix} 1 & 5 \\ 6 & 0 \end{bmatrix}$
2. $B + C$
3. $B + D$
4. $A + E$
5. $C + E$
6. $F + G$
7. $G + H$
8. $F + H$

Subtract.

9. $A - C$
10. $E - B$
11. $D - B$
12. $A - E$
13. $D - A$
14. $C - B$
15. $H - G$
16. $G - F$

Find the additive inverse of each.

17. D
18. E
19. A
20. H
21. $A + D$
22. $B + E$

One of the coldest temperatures ever recorded was that of Vostok Station, Antarctica.

One of the hottest was that of Libya, Africa. What were those two temperature extremes?

-110°C $\begin{bmatrix} -8 & 5 & -3 \\ -7 & -1 & 2 \\ 6 & 1 & -4 \end{bmatrix}$	45.6°C $\begin{bmatrix} 0 & 1 \\ 2 & -3 \end{bmatrix}$	68°C $\begin{bmatrix} 1 & 4 \\ 4 & 3 \end{bmatrix}$	58.2°C $\begin{bmatrix} 0 & 2 & 7 \\ 4 & 3 & 7 \\ 2 & -2 & 5 \end{bmatrix}$	-45°C $\begin{bmatrix} -6 & 8 \\ 2 & -5 \end{bmatrix}$	57.7°C $\begin{bmatrix} 3 & -1 \\ 2 & -2 \end{bmatrix}$
-32°C $\begin{bmatrix} 1 & 5 \\ 6 & 0 \end{bmatrix}$	-150°C $\begin{bmatrix} 4 & -5 \\ -1 & 6 \end{bmatrix}$	73°C $\begin{bmatrix} -2 & 2 \\ 0 & -7 \end{bmatrix}$	48.4°C $\begin{bmatrix} 1 & -1 \\ 1 & 0 \end{bmatrix}$	61.2°C $\begin{bmatrix} -2 & -3 \\ -4 & 1 \end{bmatrix}$	-22°C $\begin{bmatrix} -2 & -2 & 1 \\ -2 & -1 & 5 \\ 2 & -4 & 1 \end{bmatrix}$
0°C $\begin{bmatrix} 9 & -5 & -1 \\ 6 & 0 & -8 \\ -8 & 2 & 1 \end{bmatrix}$	$-88\frac{1}{3}^{\circ}\text{C}$ $\begin{bmatrix} 0 & 1 \\ -2 & -3 \end{bmatrix}$	71.4°C $\begin{bmatrix} -3 & 5 \\ 3 & 2 \end{bmatrix}$	98.6°C $\begin{bmatrix} -2 & -2 \\ -2 & -2 \end{bmatrix}$	39.2°C $\begin{bmatrix} 4 & 5 \\ 6 & 1 \end{bmatrix}$	-68°C $\begin{bmatrix} 0 & -5 \\ -3 & -3 \end{bmatrix}$
132°C $\begin{bmatrix} 9 & -3 & 6 \\ 10 & 3 & -1 \\ -6 & 0 & 6 \end{bmatrix}$	-136°C $\begin{bmatrix} 7 & -5 & 7 \\ 8 & 2 & 4 \\ -4 & -4 & 7 \end{bmatrix}$	-90.9°C $\begin{bmatrix} -6 & 2 \\ -3 & -5 \end{bmatrix}$	68.3°C $\begin{bmatrix} 3 & 1 \\ 2 & -2 \end{bmatrix}$	-173.8°C $\begin{bmatrix} 2 & -8 \\ -5 & 7 \end{bmatrix}$	-12°C $\begin{bmatrix} 4 & -1 \\ 1 & 1 \end{bmatrix}$