

HW 3 - 1: Answers

1. $x = 3, y = -1$

2. $x = 4, y = 3$

3. $x = 10, y = -29$

4. $x = 1, y = 2, z = 4$

5. $x = -2, y = -4, z = -3$

Aug 13-9:18 AM

(4) $x + y = 3$
 $y + z = 6$
 $x + z = 5$

(1) $x + y = 3$
 (2) $y + z = 6$
 (3) $x + z = 5$

$1x + 1y + 0z = 3$
 $0x + 1y + 1z = 6$
 $1x + 0y + 1z = 5$

(2) + (-3)
 $y + z = 6$
 $-x - z = -5$

 $-x + y = 1$ (4)

(1) + (4)
 $x + y = 3$
 $-x + y = 1$

 $2y = 4$
 $y = 2$

(1) $x + y = 3$
 $x + 2 = 3$
 $x = 1$

(3) $x + z = 5$
 $1 + z = 5$
 $z = 4$

$x = 1$
 $y = 2$
 $z = 4$

(B) ref

U3D2

More Solving Linear Systems in 3-Variables

Aug 13-9:09 AM

With your group, solve the following systems of equations.

1. $2x + y - z = 8$ $x = 4$
 $y + z = 4$ $y = 2$
 $x - y = 2$ $z = 2$

Aug 13-9:23 AM

$$\begin{array}{ll} 2. & x - 3y + 3z = -4 \\ & 2x + 3y - z = 15 \\ & 4x - 3y - z = 19 \end{array} \quad \begin{array}{l} x = 5 \\ y = 1 \\ z = -2 \end{array}$$

Aug 13-9:24 AM

$$\begin{array}{ll} 3. & x + 2y + 2z = -17 \\ & x + 3y - z = -16 \\ & x + y + z = -6 \end{array} \quad \begin{array}{l} x = 5 \\ y = -8 \\ z = -3 \end{array}$$

$$4. \quad b$$

Aug 13-9:25 AM

Solutions worked out:

$$\begin{aligned}
 1. \quad & 2x + y - z = 8 \\
 & y + z = 4 \\
 & x - y = 2
 \end{aligned}$$

$$\begin{array}{r}
 \text{EQs 2\&3: } x - y = 2 \\
 \quad \quad y + z = 4 \\
 \quad \quad \hline
 \quad \quad x + z = 6
 \end{array}$$

$$\begin{array}{r}
 x + z = 6 \\
 2x - z = 10 \\
 \hline
 4x = 16 \\
 x = 4
 \end{array}$$

$$\begin{array}{r}
 \text{EQs 1\&3: } 2x + y - z = 8 \\
 \quad \quad x - y = 2 \\
 \quad \quad \hline
 \quad \quad 3x - z = 10
 \end{array}$$

$$\begin{array}{r}
 4 + z = 6 \\
 z = 2
 \end{array}$$

$$\begin{array}{r}
 y + 2 = 4 \\
 y = 2
 \end{array}$$

Aug 13-9:35 AM

$$\begin{aligned}
 2. \quad & x - 3y + 3z = -4 \\
 & 2x + 3y - z = 15 \\
 & 4x - 3y - z = 19
 \end{aligned}$$

$$\begin{array}{r}
 \text{EQs 1\&2: } x - 3y + 3z = -4 \\
 \quad \quad 2x + 3y - z = 15 \\
 \quad \quad \hline
 \quad \quad 3x + 2z = 11
 \end{array}$$

$$\begin{array}{r}
 3x + 2z = 11 \\
 6x - 2z = 34 \\
 \hline
 9x = 45
 \end{array}$$

$$\begin{array}{r}
 3(5) + 2z = 11 \\
 2z = -4 \\
 z = -2
 \end{array}$$

$$\begin{array}{r}
 \text{EQs 2\&3: } 2x + 3y - z = 15 \\
 \quad \quad 4x - 3y - z = 19 \\
 \quad \quad \hline
 \quad \quad 6x - 2z = 34
 \end{array}$$

$$\begin{array}{r}
 9x = 45 \\
 x = 5
 \end{array}$$

$$\begin{array}{r}
 5 - 3y + 3(-2) = -4 \\
 y = 1
 \end{array}$$

Aug 13-9:41 AM

$$\begin{array}{l}
 \textcircled{1} \quad x + 2y + 2z = -17 \\
 \textcircled{2} \quad x + 3y - z = -16 \\
 \textcircled{3} \quad x + y + z = -6
 \end{array}$$

$$\begin{array}{r}
 \textcircled{1} \dot{-} \textcircled{2} \\
 -(x + 2y + 2z = -17) \\
 \hline
 x + 3y - z = -16 \\
 -x - 2y - 2z = 17 \\
 \hline
 x + 3y - z = -16 \\
 -x - 2y - 2z = 17 \\
 \hline
 y - 3z = 1
 \end{array}$$

$$\begin{array}{r}
 \textcircled{2} \dot{-} \textcircled{3} \\
 x + 3y - z = -16 \\
 -1(x + y + z = -6) \\
 \hline
 x + 3y - z = -16 \\
 -x - y - z = 6 \\
 \hline
 2y - 2z = -10 \\
 -y + z = 5
 \end{array}$$

$$\begin{array}{r}
 y - 3z = 1 \\
 -y + z = 5 \\
 \hline
 -2z = 6 \\
 z = -3 \\
 -y - 3 = 5 \\
 -y = 8 \\
 y = -8 \\
 x - 8 - 3 = -6 \\
 x = 5
 \end{array}$$

$$\begin{array}{l}
 x = 5 \\
 y = -8 \\
 z = -3
 \end{array}$$

Aug 13-9:52 AM

4. Regents Exam, June 2019 #23

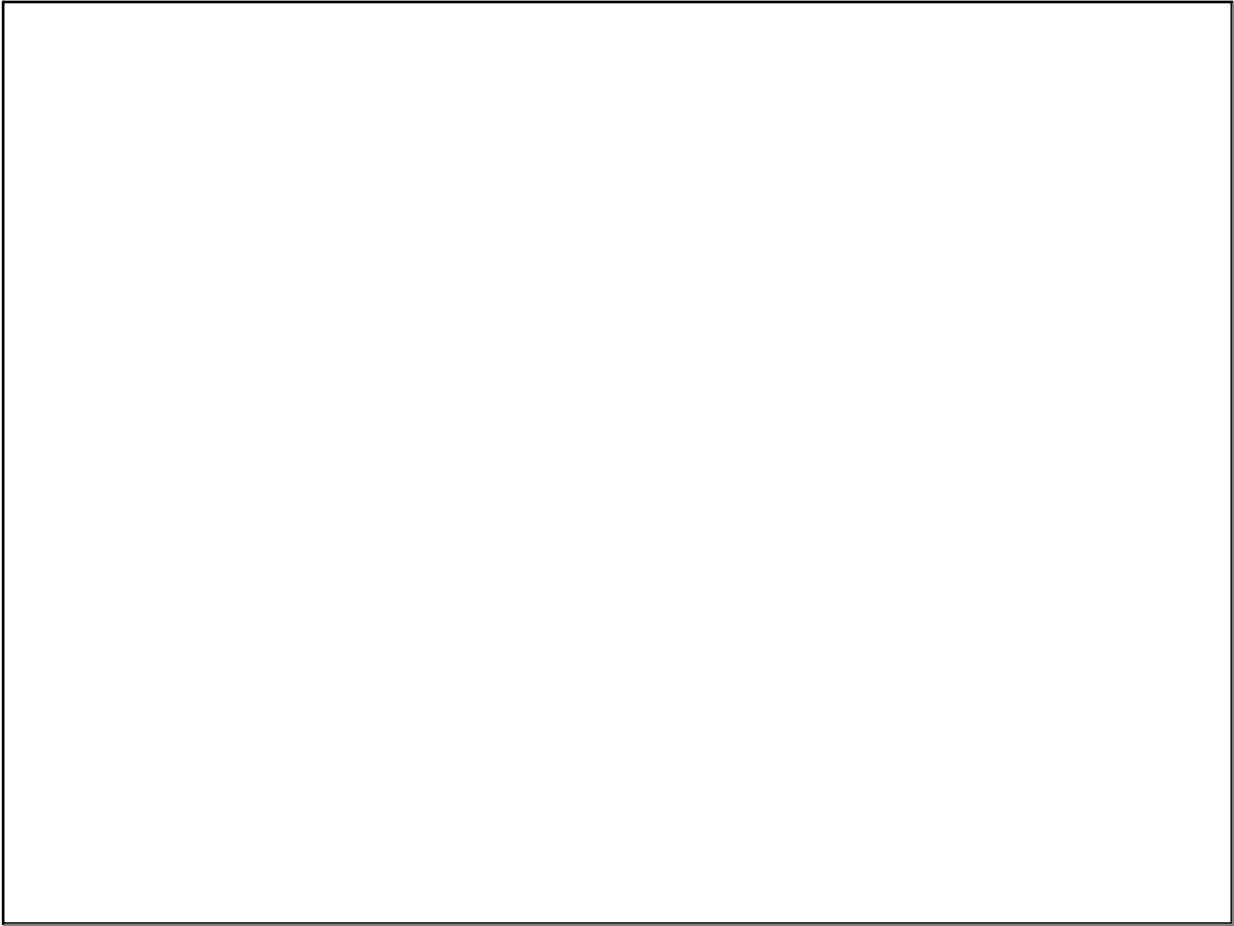
Consider the system of equations below:

$$\begin{array}{l}
 x + y - z = 6 \\
 2x - 3y + 2z = -19 \\
 -x + 4y - z = 17
 \end{array}$$

Which number is *not* the value of any variable in the solution of the system?

- a. -1 b. 2
c. 3 d. -4

Type into calculator using Matrix



Oct 15-3:52 PM