10.1: (Systems of Linear Equations in Two Variables)

If (a, b) is the solution of the system of equations $\begin{cases} 2\sqrt{2}x + 3\sqrt{5}y = 7 \\ 3\sqrt{2}x - \sqrt{5}y = -17 \end{cases}$, then $ab =$

A) $-4\sqrt{5}$

B) $4\sqrt{10}$

C) $-2\sqrt{10}$

D) $2\sqrt{10}$

E) -20

A class of 195 students went on a field trip. They took 7 vehicles, some cars and some buses. If each car holds 5 students and each bus hold 45 students, then the number of cars they took is

(A) 3

(B) 4

(C) 5

(D) 2

(E) 9

If the system of $\begin{cases} x - 3y = 1 \\ 2x + my = m + 8 \end{cases}$ is dependent, then the solution set is given by

A) $\{(3t + 1, t), t$ is any real number $\}$

B) $\{(t, 3t + 1), t$ is any real number $\}$

C) $(-\infty, \infty)$

D) $\emptyset$

E) $\{(\mathrm{t}, t + 8), \mathrm{t}$ is any real number $\}$

If system of equations $\begin{cases} \frac{x}{3} - \frac{y}{2} = \frac{3}{2} \\ \frac{2x}{3} + ky = \frac{3}{2} \end{cases}$, is inconsistent, then $k =$

A) -1

B) -2

C) 1

D) 2

E) $\frac{1}{2}$

The sum of all the possible values of k for which the system

$\begin{cases} k^2x + 2x - 6y = 2 \\ kx + 2y = 12 \end{cases}$ is inconsistent, is equal to

A) -3

B) 1

C) - 1

D) 3

E) -2

If (m, n) is the solution of the system $\begin{cases} 3x - y = 0 \\ 5x + 2y = 22 \end{cases}$, then $m + n =$

A) 8

B) 4

C) -4

D) 6

E) - 2

If the system of linear equations $\begin{cases} x - 6y = 2 \\ kx + 3y = 4 \end{cases}$ is inconsistent, then

A) $k = -\frac{1}{2}$

B) $k = -2$

C) $k < -2$

D) $k = 2$

E) $k > \frac{1}{2}$

The set of all values of k for which the system $\begin{cases} 3x + ky = 11 \\ 2x + 4y = 9 \end{cases}$ has a unique solution is

A) $\{k \mid k \leq 6\}$

B) $\{6\}$

C) $\{k \mid k \geq 6\}$

D) $\left\{k \mid k \neq \frac{3}{2}\right\}$

E) $\{k \mid k \neq 6\}$

If (a, b) is the solution of the system of equations $\begin{cases} \frac{2x-1}{3} + \frac{y+2}{4} = 4 \ldots (1) \\ \frac{x+3}{2} - \frac{x-y}{3} = 3, \ldots (2) \end{cases}$ then

$a - b =$

A) 1

B) 7

C) 5

D) 3

E) 2

If (p, q) is the solution of the system $\begin{cases} \frac{3}{4}x + \frac{1}{2}y = 5 \\ \frac{1}{4}x - \frac{3}{2}y = 1 \end{cases}$, then $p - q =$

A) 6

B) $\frac{34}{5}$

C) $-\frac{32}{5}$

D) 8

E) -8

Which one of the following ordered pairs is a possible solution of the system of linear equations $\begin{cases} 2x - \frac{1}{2}y = -1 \\ -8x + 2y = 4 \end{cases}$

A) $\left(\frac{y+2}{2}, y\right)$

B) $\left(\frac{y-2}{4}, y\right)$

C) $(x, 2x - 5)$

D) $(x, 3x + 8)$

E) $(x, 2x + 5)$

If the ordered pair (a, b) is the solution of the system $\begin{cases} \frac{x+6}{5} + \frac{2y-x}{10} = 1 \\ \frac{x+2}{4} + \frac{3y+2}{5} = -3 \end{cases}$, then $a + b =$

A) -32

B) 32

C) -100

D) -104

E) 100

If the lines whose equations are $2x + 3y = 1$, $x = 3y + 5$ and $kx + 3y = 3$ all intersect at the same point. Then the value of k is:

A) 3

B) 4

C) 0

D) -2

E) -1

If $(2, -1)$ is a solution of the linear system $ax - by = 12$,

$bx + ay = -1$, then $a + b =$

A) 7

B) 8

C) 4

D) 6

E) 9

If the linear system $\begin{cases} -2x + 2y &= -1 \\ 3x - ky &= 2 - k \end{cases}$ is inconsistent, then $k =$

A) 3

B) -3

C) 6

D) -6

E) 4

If (a, b) is the solution of the system $\begin{cases} \frac{(x-y)}{2} - \frac{(x+y)}{4} = 1 \\ 2x - 3y = 5 \end{cases}$, then $a + b =$

(a) 0
(b) 1
(c) 2
(d) 3
(e) 4

If the system $\begin{cases} 4x + 6y = k \\ 6x + 9y = 6' \end{cases}$ is dependent, then $2k + 1 =$

(a) 9
(b) 3
(c) 5
(d) 16
(e) 0

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