MATHS

BOOKS - KAPLAN INC MATHS (ENGLISH)

SYSTEMS OF LINEAR EQUATIONS

How Much Do You Know

1. $-7X + 2Y = 18$ ltBRgt $X + Y = 0$

In the system of equation above, what is the

value of x ?

A. -2

B. 0

C. 2

D. 4

Answer: A

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2. At a certain mive theate, there are 16 rows and each row has either 20 or 24 seats.If the total number of seats in all 16 rows is 348, how many rows have 24 seats ?

A. 7

B. 9

C. 11

D. 13

Answer: A

3. If $17x - 5y = 8$ and $14x - 7y = -7$,

what is the value of $3x + 2y$?

A. -15

B. -5

C. 5

D. 15

Answer: D

4. If $0.2x = 10 - 0.5y$, then $10y + 4x =$

$$\frac{1}{2}x - 2.3y = 7$$

$$ax - 8y = -1$$

5. If the system of linear equations above has o solution, and a is a constant, then what is the value of a ?

A. -2

B. $-\dfrac{1}{2}$

C. 2

D. 6

Answer: D

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Try On Your Own

1. If $7c + 8b = 15$ and $3b - c = 2,$ what is the value of b ?

2. $\begin{cases} 3x - 3y = 0 \\ y = 2x + 5 \end{cases}$

Given the systyem of equations above, what is

the sum of x and y ?

    A. -10

    B. -5

    C. 0

    D. 5

Answer: A

3. $\begin{cases} 4x + 3y = 14 - y \\ x - 5y = 2 \end{cases}$

If (x, y) is a solutin to the system of equations

above, then what is the vaue of xy?

A. $\dfrac{1}{4}$

B. 1

C. 3

D. 18

Answer: C

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4. If $5a = 6b + 7$ and $a - b = 3,$ what is the value of $\dfrac{b}{2}$?

A. 2

B. 4

C. 5.5

D. 11

Answer: B

5. Marisol is selling snacks at her school's soccer games to raise money for a service project. She boys nuts in cases that contain 24 gags and granolda bars in cases that contain 20 packages. She sells the nuts for $1.25 a bag and the granola bars for $1.75 a package. If

she raised $160 and sold 112 items, how many

cases of granolsa bars did Marisol buy ?

A. 2

B. 3

C. 40

D. 72

Answer: A

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6. $\begin{cases} 3x + 2y = 15 \\ 2x + 3y = 10 \end{cases}$

Given the system of equations above, what is

the value of $5x + 5y$?

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7. If $2x - 3y = 14$ and $5x + 3y = 21,$ what

is the value of x ?

A. -1

B. 0

C. $\dfrac{7}{3}$

D. 5

Answer: D

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8. If $7c - 2b = 15$ and $3b - 6c = 2$, what is the value of $b + c$?

A. -27

B. -3

C. 8

D. 17

Answer: D

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9. If $y = -x - 15$ and $\dfrac{5y}{2} - 37 = -\dfrac{x}{2}$,

then what is the value of $2x + 6y$?

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10. If $2x + 2y = 22$ and $3x - 4y = 12$, what is the value of $\dfrac{y}{x}$?

11. $\begin{cases} 21x - 6y = 54 \\ 9 + y = 3.5x \end{cases}$

The system of equations shown above has how many solutions ?

A. Zero

B. One

C. Two

D. infinitely many

Answer: D

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12. $\begin{cases} 6x + 3y = 18 \\ qx - \frac{y}{3} = -2 \end{cases}$

In the system of linear equations above, q is a constant. If the system has infinitely many solutions, what is the value of q?

A. -9

B. -2.3

C. 2.3

D. 9

Answer: B

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13. $\begin{cases} hx + 4y = -10 \\ kx + 3y = -15 \end{cases}$

If the graphs of the lines in the system of

equations above intersect at $(-3, 1)$, what is the value of $\dfrac{k}{h}$?
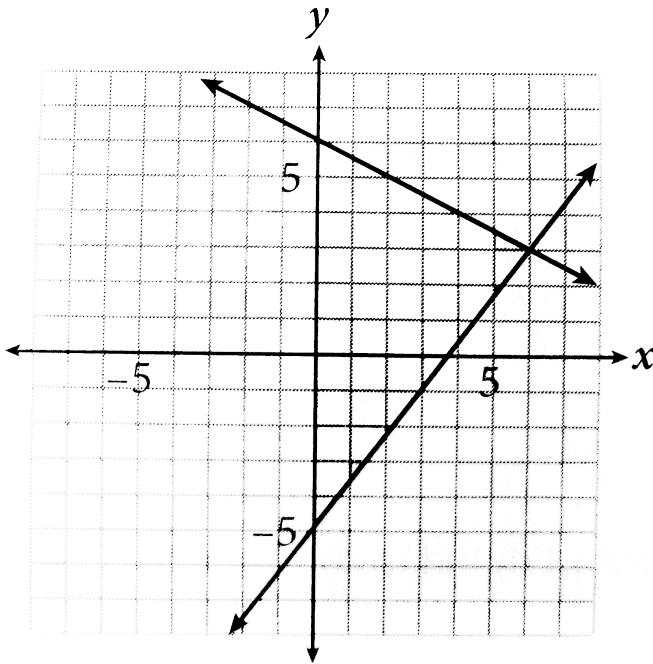
A. $\dfrac{1}{3}$

B. 2

C. 3

D. 6

Answer: C

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14.

What is tha y-coordinate of the solution to the

system shown above ?

A. -5

B. 3

C. 5

D. 6

Answer: B

15. $\begin{cases} 3x - 9y = -6 \\ \frac{1}{2}x - \frac{3}{2}y = c \end{cases}$

If the system of linear equations above has infinitely many solutions, and c is a constant, what is the value of c ?

A. -6

B. -3

C. -2

D. -1

Answer: D

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On Test Day

1. If

$28x - 5y = 36$ and $15x + 5y + 18 = 68$,

whatis the value of x ?

A. 1

B. 2

C. 3

D. 4

Answer: B

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How Much Have You Learned

1. If $8x - 2y = 10$ and $3y - 9x = 12$, then what is the value of $y - x$?

A. -8

B. 2

C. 12

D. 22

Answer: D

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2. A state college has separate fee retes for resident students and nonresident students. Resident students are charged $412 per semester and nonresident students are charged $879 per semester. The college's sophomore class of 1,980 students paid a total of $1, 170, 210 in fees for the most recent semester. Which of the following systems of equations represents the number of resident (r) and nonresident (n) sophomores and the amount of fees the two groups paid ?

A. $r + n = 1,170,210$

$421r + 879n = 1,980$

B. $r + n = 1,980$

$879r + 421n = 1,170,210$

C. $r + n = 1,980$

$421r + 879n = 1,170,210$

D. $r + n = 1,170,210$

$879r + 421n = 1,980$

Answer: C

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3. A sofa costs $50 less than three times the cost of a shair. If the sofa and chair together cost $650, how much more does the sofa cost than the chair ?

A. $175

B. $225

C. $300

D. $475

Answer: C

Equation 1

x	y
-2	6
0	4
2	2
4	0

Equation 2

x	y
-8	-8
-4	-7
0	-6
4	-5

4.

The tables above represent data points for

two linear equations. If the two equations form a system, what is the x-coordinate of the solution to that system ?
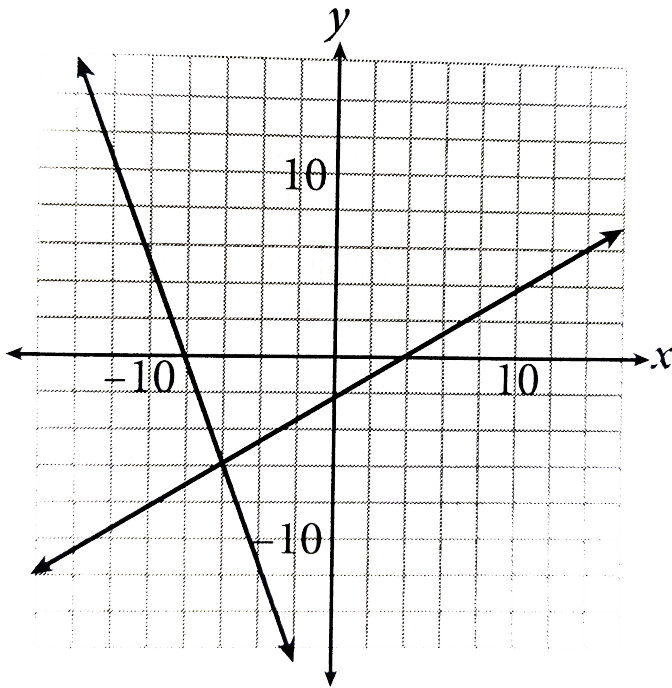
A. 4

B. 6

C. 8

D. -4

Answer: C

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5.

If (A,B) is the solution to the system of equations shown above, and A and B are intergers, then what is the value of $A + B$?

A. -12

B. -6

C. 0

D. 6

Answer: A

6. $\begin{cases} -16 = 7y + 4x \\ k = \frac{7}{8}y + \frac{1}{2}x \end{cases}$

If the system of linear equatioons above has

infinitely many solutions, and k is a constant,

what is the value of k ?

A. -8

B. -4

C. -2

D. -1

Answer: C

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7. $\begin{cases} -13 = ay + 24x \\ 9 + 6bx = 5y \end{cases}$

If the system of equations above has no

solutions, and a and b are constants, then what is the value of $|a + b|$?

A. 0

B. 1

C. 4

D. 9

Answer: B

8. If $\frac{1}{4}x + 2y = \frac{11}{4}$ and $-6y - x = 7$,

what is half

9. At a certain toy store, tiny stuffed pandas cost $3.50 and giant stuffed pandas cost $14. If the store sold 29 panda toys and made $217 inn revenue in one week how many tiny stuffed pandas and giant stuffed pandas were sold ?

A. 18 tiny stuffed pandas, 11 gaint stuffed pandas

B. 11 tiny stuffed pandas, 18 gaint stuffed pandas

C. 12 tiny stuffed pandas, 17 giant stuffed pandas

D. 18 tiny stuffed pandas, 13 giant stuffed pandas

Answer: A

10. A bead shop sell wooden beads for $0.20 each and crystal beads for $0.50 each. If a jewelry artist buys 127 beads total and pays $41 for them, how much more did she spend on crystal beads than wooden beads ?

A. $11

B. $15

C. $23

D. $26

Answer: A

Substitution

1. If $3x + 2y = 15$ and $x + y = 10,$ what is the value of y ?

   A. $- 15$

   B. $- 5$

   C. 5

D. 15

Answer: D

Combination

1. $\begin{cases} 4x - 5y = 10 \\ 2x + 3y = -6 \end{cases}$

If the solution to the system of equations above is (x,y), what is the value of y?

A. -2

B. -1

C. 1

D. 2

Answer: A

Number Of Possible Solutions

1. $\begin{cases} 5x - 3y = 10 \\ 6y = kx - 42 \end{cases}$

In the system of linear equations above, k represents a constant. If the system of equations has no solution, what is the value of 2k?

A. $\dfrac{5}{2}$

B. 5

C. 10

D. 20

Answer: D

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