

Name

Gonzalez

Date

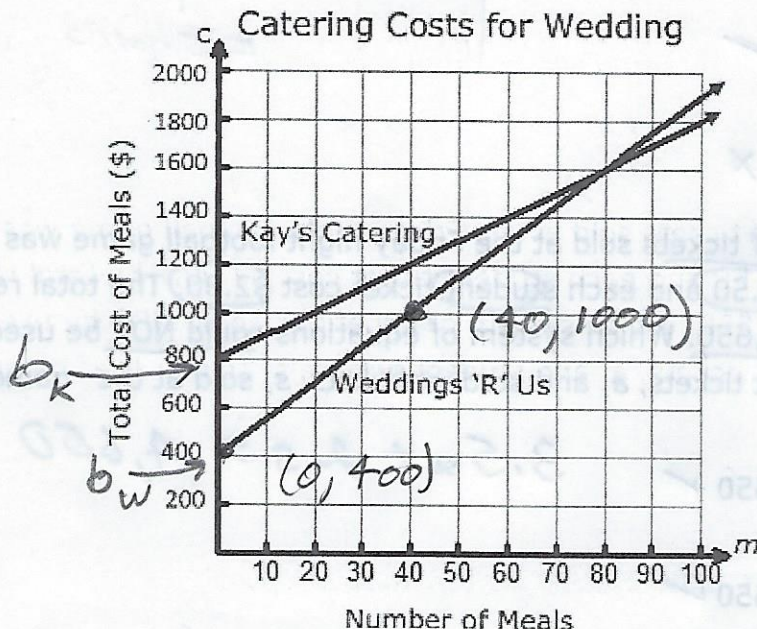
11-14-18

Pd

Unit 5 Test

Must Show Work to Get Credit

- 1 Renee is comparing prices from two different catering services, Kay's Catering and Weddings 'R' Us, to cater the meals for her wedding dinner. The graph below represents the catering cost, c , as a function of the number of meals served, m , for each catering service Renee is considering.



Which system of equations can be used to best represent the graph?

- A** Kay's Catering: $c = 10m + 800$ ✓
 Weddings 'R' Us: $c = 15m + 400$ ✓
- B** Kay's Catering: $c = \frac{1}{2}m + 800$ ✓
 Weddings 'R' Us: $c = \frac{3}{4}m + 400$ ✓
- C** Kay's Catering: $c = 800m + 10$ ✗
 Weddings 'R' Us: $c = 400m + 15$ ✗
- D** Kay's Catering: $c = \frac{1}{2}m + 1600$ ✗
 Weddings 'R' Us: $c = \frac{3}{4}m + 80$ ✗

$y = mx + b$

$y_w = mx + 400$

$y_k = mx + 800$

$m_w = \frac{(1000) - (400)}{(40) - (0)}$

$= \frac{600}{40}$

$= 15$

- 2 A football team scored 12 times in a game for a total of 72 points. Each touchdown with the extra point is worth 7 points. Each field goal is worth 3 points. If t is the number of touchdowns and f is the number of field goals, which system of equations can be used to determine the number of touchdowns and field goals made in the football game?

F $f + t = 72$
 $7t + 3f = 12$ ✗

G $t + f = 12$
 $3t + 7f = 72$ ✗

H $t + f = 12$
 $7t + 3f = 72$ ✓

J $t + f = 12$
 $10(t + f) = 72$ ✗

$7 \text{ pts for } t, + 3 \text{ pts for } f = 72 \text{ pts}$

$7t + 3f = 72$

$t + f = 12$

- 3 The total number of tickets sold at the Friday night football game was 1,650. Each adult ticket cost \$3.50 and each student ticket cost \$2.00. The total revenue for ticket sales was \$4,650. Which system of equations could NOT be used to determine the number of adult tickets, a , and student tickets, s , sold at the game?

A $a + s = 1650$
 $3.5a + 2s = 4650$ ✓

B $1650 - s = a$
 $3.5a + 2s = 4650$ ✓

C $a + s = 1650$
 $3.5a = 4650 - 2s$?

D $a + s = 1650$
 $2a + 3.5s = 4650$ ✗

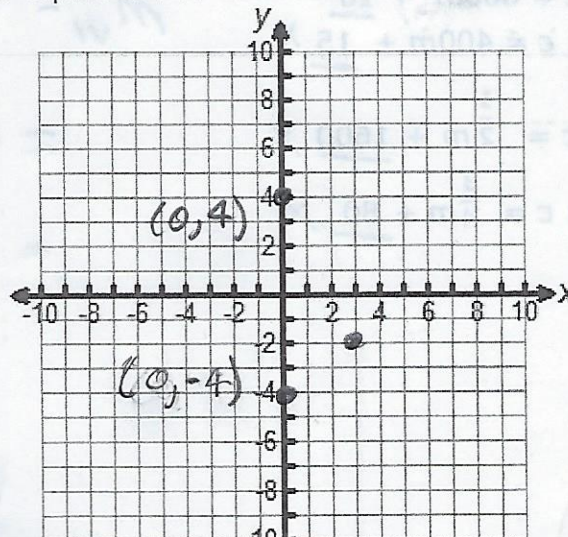
$3.5a + 2s = 4,650$

$y = \frac{2}{3}x - 4$

- 4 A system of linear equations given.

$y = -2x + 4$

Graph this system of linear equations to determine a reasonable estimate of the solution.



- Graph
- Relation
- Equations
- Analysis
- Intersect
- Trace

F $(2, \frac{1}{2})$

G $(3, -2)$

H $x = 3$

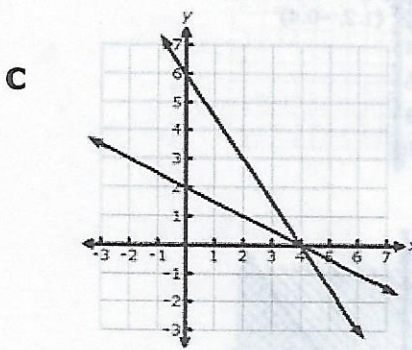
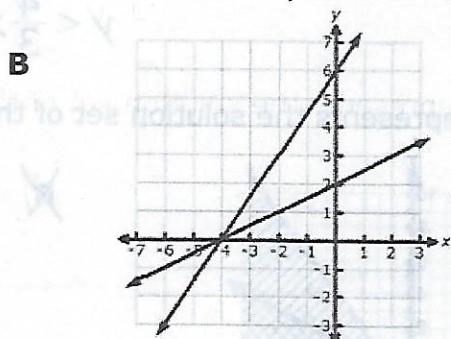
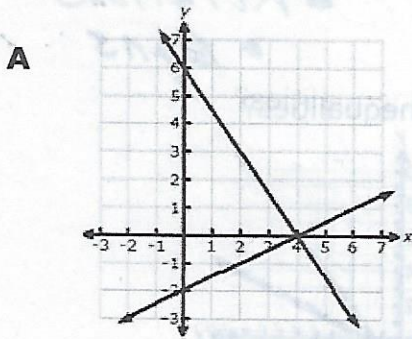
J $(-2, 3)$

5 A system of linear equations is shown below.

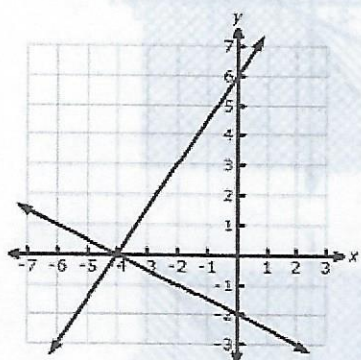
$$\begin{aligned} -2y &= x + 4 \\ -3x + 2y &= 12 \end{aligned}$$

Graph
DOT
Eqns
Analysis
Intersection

Which graph can be used to determine the solution to the system of equations?



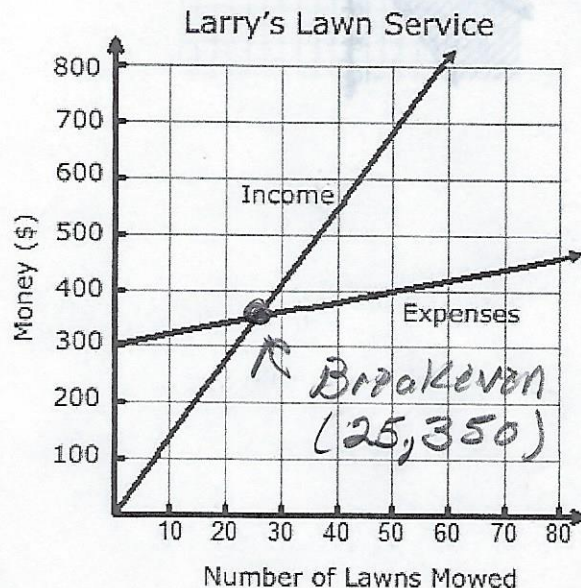
D



6 Larry is starting his own lawn service company. He has initial startup costs totaling \$300, plus ongoing operating expenses. The function representing Larry's expenses and the function representing Larry's income for lawn services are shown in the graph below.

Approximately how many lawns will Larry have to mow before he starts making a profit?

Profit starts after expenses
Income = Expenses
Break Even



- F Larry must mow approximately 300 lawns before he starts making a profit.
- G Larry must mow approximately 350 lawns before he starts making a profit.
- H** Larry must mow approximately 25 lawns before he starts making a profit.
- J Larry will start making a profit when he mows his first lawn.

7 A system of two linear inequalities in two variables is shown below.

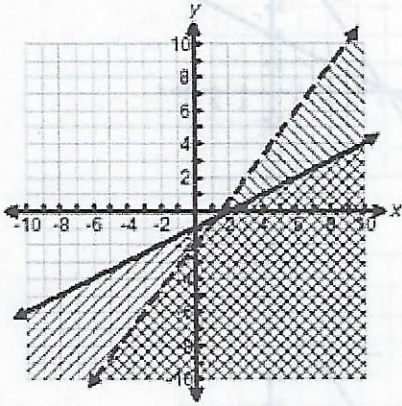
$$y \geq \frac{1}{2}x - 1$$

$$y < \frac{4}{3}x - 2$$

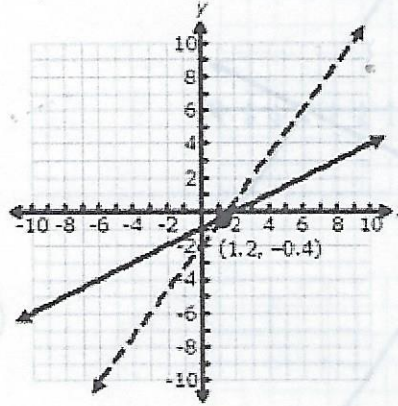
- Graph
- Del
- Relations
- Eqns

Which graph represents the solution set of the system of inequalities?

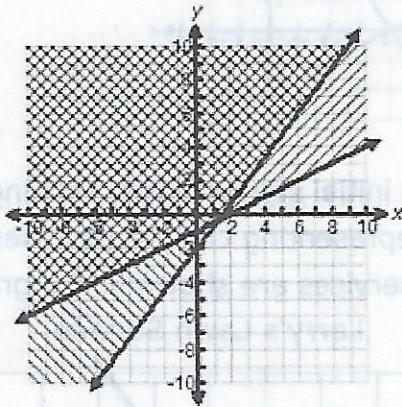
A



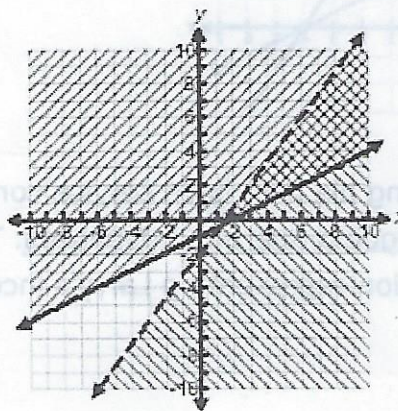
B



C



D



- 8 Matthew has a jar of 368 nickels and dimes he has been collecting. The total value of the coins is \$28.40.

$$n + d = 368$$

$$0.05n + 0.1d = 28.40$$

Which system of linear equations and solution can be used to represent the number of nickels and dimes Matthew has in his collection?

- F** $n + d = 368$ ✓
 $0.05n + 0.1d = 28.4$ ✓
 168 nickels and 200 dimes ✓
- G** $n + d = 368$ ✓
 $0.01n + 0.05d = 28.4$ ✗
 200 nickels and 168 dimes ✗
- H** $n + d = 368$ ✓
 $0.05n + 0.1d = 28.4$ ✓
 200 nickels and 168 dimes ✗
- I** $n + d = 368$ ✓
 $0.1n + 0.05d = 28.4$ ✗
 168 nickels and 200 dimes ✗
- Handwritten notes: Graph, Del, Relation, Egn, Analysis, Intersect*

- 9 Vanessa wants to purchase a new cell phone plan. The two plans from which she can choose are shown below.

Plan A \$22 per month, plus \$0.13 per minute for minutes used Plan B \$44 per month, plus \$0.09 per minute for minutes used after the first 100 minutes
--

Vanessa used the system of equations shown below to determine how many minutes she can talk on both plans for the monthly costs to be equal.

(x, y)
 ↑ ↑
 min cost
 $(325, 64.3)$

$$C_A = 22 + 0.13m$$

$$C_B = 44 + 0.09(m - 100)$$

When using substitution to solve the system of equations, what is a reasonable solution?

- A** When Vanessa has used the phone for 775 minutes, the cost for Plan A and the cost for Plan B will both be \$122.75.
- B** When Vanessa has used the phone for 325 minutes, the cost for Plan A and the cost for Plan B will both be \$64.25.
- C** When Vanessa has used the phone for 32.5 minutes, the cost for Plan A and the cost for Plan B will both be \$26.23.
- D** When Vanessa has used the phone for 764 minutes, the cost for Plan A and the cost for Plan B will both be \$121.32.
- Handwritten notes: Graph, Del, Relation, Egn, Analysis, Intersect*

10 The table below shows data points for (x, y_1) .

x	y_1
-1	3
0	9
1	15
2	21

same point

Which (x, y_2) table does not contain a solution to the system of two linear equations in two variables represented by the (x, y_1) table and the (x, y_2) table?

F

x	y_2
-1	7
0	13
1	19
2	25

X
X
X
X

G

x	y_2
-1	3
0	10
1	17
2	24

✓

H

x	y_2
-1	-3
0	8
1	15
2	18

✓

J

x	y_2
-1	15
0	9
1	3
2	-3

✓

11 A system of two linear equations with two variables is shown below.

$$14 + x = 7y$$

$$x - 7y = 14$$

$$\frac{14}{7} + \frac{x}{7} = \frac{7y}{7}$$

$$2 + \frac{1}{7}x = y$$

Which answer is the solution to the system of linear equations?

A $(0, -28)$

B No solution

C All points on the line $y = \frac{1}{7}x + 2$

D $(14, 4)$

$$\begin{array}{r} x - 7y = 14 \\ -x \\ \hline -7y = 14 \\ \div -7 \\ \hline y = -2 \end{array}$$

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

*same slope
Parallel →
No solution*