A.2H Write Linear Inequalities Given a Table, Graph, or Verbal Description

GO ON

1 Dixon Orchards has purchased land on which to plant lime and orange trees. Each lime tree requires 100 square feet of area. Each orange tree requires 200 square feet of area. Dixon Orchards determines that they have no more than 3,100 square feet of land on which to plant the lime and orange trees. If x represents the number of lime trees and y represents the number of orange trees, which inequality can be used to describe the situation?

A $100x + 200y < 3{,}100$

B $100x + 200y \leq 3{,}100$

C $100x + 200y > 3{,}100$

D $200x + 100y \leq 3{,}100$

2 Marsha is making plans for her daughter's quinceañera, celebrating her fifteenth birthday. Marsha has accepted a bid by Fancy Flowers to supply centerpieces for the tables at the reception. The bid from Fancy Flowers is shown below.

FANCY FLOWERS

Bid for Quinceañera Centerpieces

Guest Table Lily Arrangements – $175 each

Family Table Rose Arrangements – $250 each

Order must be placed 1 week prior to event.

Marsha has budgeted no more than $3,000 on centerpieces for the tables at the reception. Which inequality represents all possible combinations of x, the number of Guest Table Lily Arrangements, and y, the number of Family Table Rose Arrangements, that Marsha can buy for no more than $3,000?

F $175x + 250y \leq 3000$

G $175x + 250y < 3000$

H $175x + 250y > 3000$

J $250x + 175y \leq 3000$

3 Orchestra Tonight is selling tickets for its local performance. Orchestra fans can buy tickets to sit in the balcony or on the floor of the concert hall. Tickets for balcony seats are $83 each. Tickets for seating on the floor are 60% of the price of the balcony tickets. Which inequality represents all possible combinations of f, the number of tickets for floor seats, and b, the number of tickets for balcony seats, that a person can buy and spend no more than $560?

A $83b + 138.33f > 560$

B $83b + 49.8f > 560$

C $83b + 49.8f \leq 560$

D $83b + 138.33f \leq 560$

4 Suzette is opening an office cleaning business. Her competitor charges $35 per hour plus a $42 cleaning supply fee. Which inequality in two variables could be used to represent where Suzette's charges, S, would be at most that of her competitor's charges?

F $S > 35h + 42$

G $S \geq 35h + 42$

H $S \leq 35h + 42$

J $S < 35h + 42$

5 Rita plans to make a call using a calling card. For each call, Rita has two options:

1. Pay $0.49, plus an additional $0.019 per minute.

2. Pay $0.059 per minute.

She predicts that her call will be x minutes long. Which inequality represents the statement, "Rita would save money using the second option"?

A $0.019 + 0.49x < 0.059$

B $0.019 + 0.49x > 0.059$

C $0.019x + 0.49 < 0.059x$

D $0.019x + 0.49 > 0.059x$

6 A linear inequality in two variables is shown below.

$$y > x + 4$$

Which table of values represents the linear inequality of y as a function of x?

F

x	-2	-1	0	1	2
y	3	4	5	6	7

G

x	-2	-1	0	1	2
y	2	3	4	5	6

H

x	-2	-1	0	1	2
y	-6	-5	4	5	6

J

x	-2	-1	0	1	2
y	2	1	0	-1	-2

7 Six data points are given in the table below.

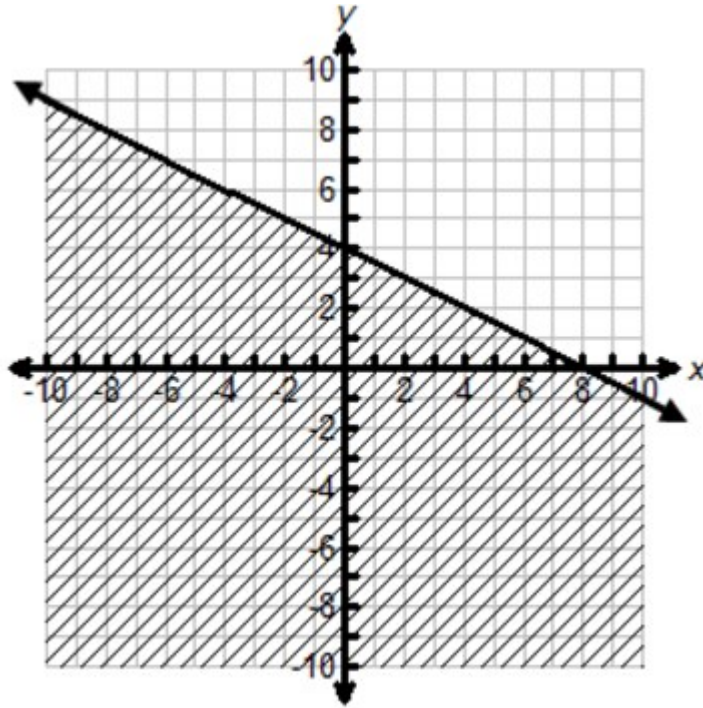| x	y
-2	3
5	-11
-4	7
2	-5
-1	1
3	-7

Which linear inequalities in two variables can be used to represent the data set?

I. $y \geq -11$

II. $2x + y > -3$

III. $4x + y \leq 5$

A I and III only

B I and II only

C II and III only

D I, II, and III

8 A graph of a linear inequality in two variables is shown below.

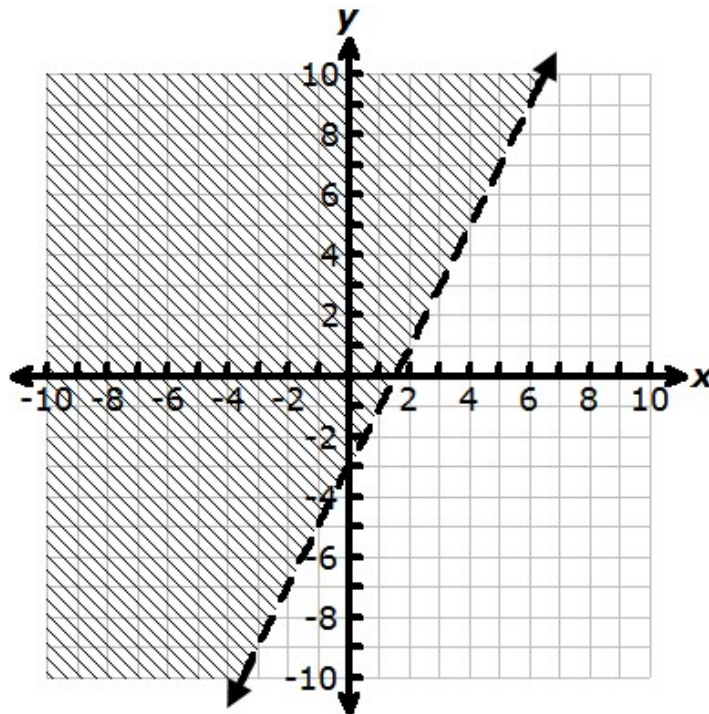Which linear inequality can be used to represent the graph?

F $y \leq -\frac{1}{2}x + 4$

G $y \leq -2x + 4$

H $y \geq -\frac{1}{2}x + 4$

J $y < -\frac{1}{2}x + 4$

9 A graph of a linear inequality in two variables is shown below.

Which linear inequality can be used to represent the graph?

A $y > \dfrac{1}{2}x - 3$

B $y < 2x - 3$

C $y < \dfrac{1}{2}x - 3$

D $y > 2x - 3$