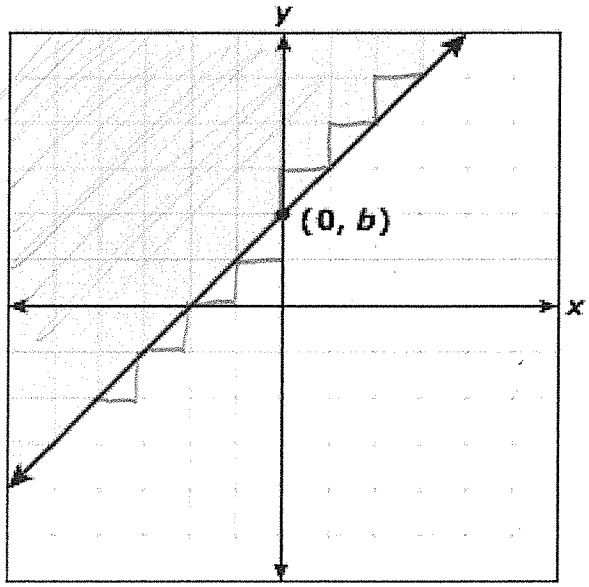
Inequalities

50 Which inequality can be represented by the graph below?



$y = mx + b$

SLOPE = $1 = \frac{\text{UP } 1}{\text{RT } 1} = \frac{\text{DOWN } 1}{\text{LT } 1}$

$\geq$ greater than or equal to
(MUST BE A SOLID LINE AND SHADED ABOVE THE LINE

F $y \geq x - b$

G $x - y \geq -b$

H $x + y \leq b$

J $-y \leq x + b$

Inequalities

22 Which inequality is equivalent to $7x - 2y > 8$?

REWRITE

$-7x \quad -7x$

$-2y > -7x + 8$

$\frac{-2y}{-2} > \frac{-7x}{-2} + \frac{8}{-2}$

$y < \frac{7}{2}x - 4$

(OR)

TYPE EQUATIONS INTO DESMOS OR CALCULATOR AND COMPARE GRAPHS.

F $y > \frac{7}{2}x + 8$

G $y > -\frac{2}{7}x + \frac{8}{7}$

H $y < \frac{7}{2}x - 4$

J $y < -\frac{2}{7}x - \frac{4}{7}$

Inequalities

2 A man bought x boxes of doughnuts for \$3.49 each. He paid with a \$50 bill and received the correct amount of change. If he received more than \$10 but less than \$20, which inequality represents the number of boxes of doughnuts he could have bought?

F $9 \leq x \leq 11$

G $8 \leq x \leq 12$

H $8 \leq x \leq 11$

J $9 \leq x \leq 12$

SET UP A COMPOUND INEQUALITY

$10 < 50 - 3.49x < 20$

SOLVE

$-50 \quad -50 \quad -50$

$-40 < -3.49x < -30$

$\frac{-40}{-3.49} \geq \frac{-3.49x}{-3.49} \geq \frac{-30}{-3.49}$

FLIP THE SIGN BC DIVISION BY A NEGATIVE

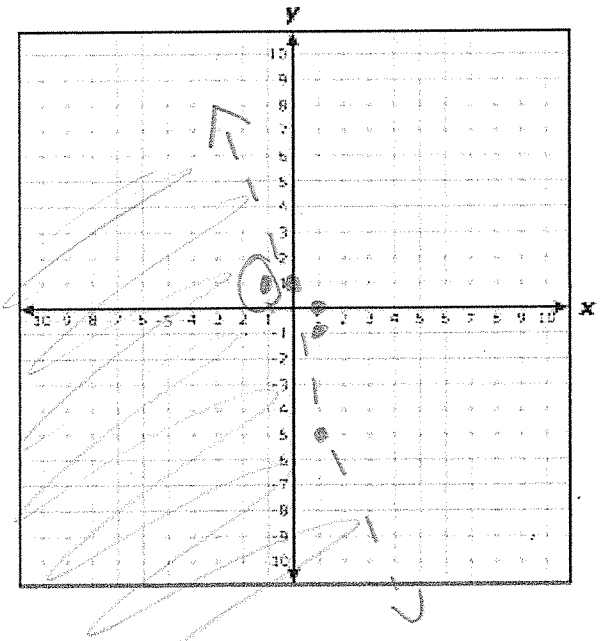
$11.5 \geq x \geq 8.6$

$8.6 \leq x \leq 11.5$

Inequalities

31 Which coordinate pair is in the solution set for $y < 1 - 6x$?

GRAPH IT OR USE DESMOS/CALCULATOR



SLOPE = -6

Y-INTERCEPT = 1

< MEANS LESS, SHADE BELOW THE LINE,

FIND THE POINT IN THE SHADING.

A (1, 0)

B (1, −1)

C (0, 1)

D (−1, 1)

Inequalities

52 A tennis player broke the old record for the most matches won in a tournament by at least 2 matches. Which inequality can be used to find all possible values of t, the number of matches the player won, in terms of r, the old record?

F $t \leq r - 2$

G $t \geq 2r$

H $t \leq \frac{r}{2}$

J $t \geq r + 2$

THIS PLAYER BROKE THE OLD RECORD "r" by 2.

4 A family will travel 350 miles from their house in order to reach Dallas, TX. Which inequality can be used to find all possible values of t, the time it will take this family to reach Dallas in hours, if they travel at an average speed of at least r miles per hour?

F $t \leq 350r$

G $t > \frac{r}{350}$

H $t \leq \frac{350}{r}$

J $t > 350r^2$

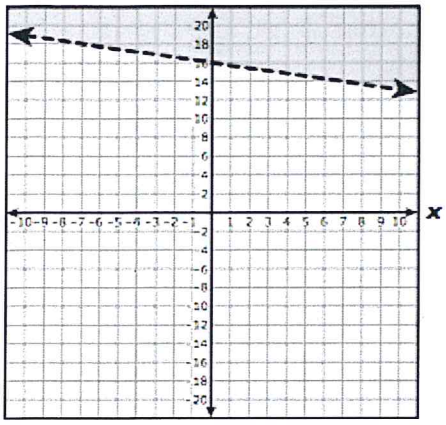
(TIME) $t \leq \frac{350\ (\text{MILES})}{r\ (\text{SPEED})}$

Inequalities

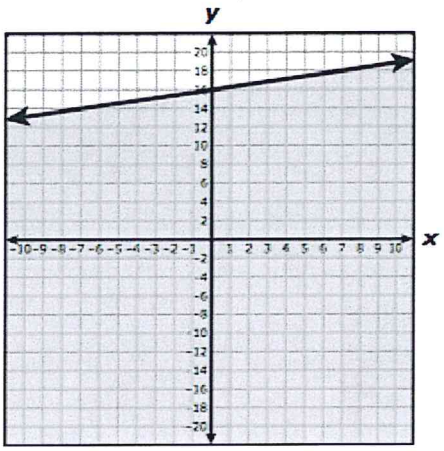
49 Which graph represents the inequality $-2x + 7y \leq 112$?

TYPE INTO DESMOS ! ≤ MUST BE SOLID LINE.

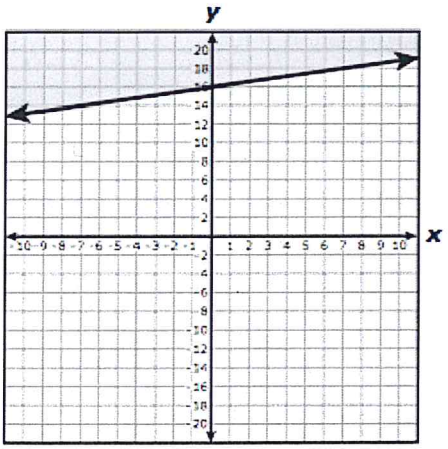
A



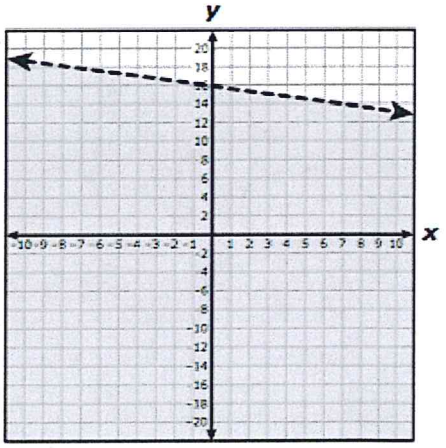
C



B



D



40 Which inequality represents all the values of x for $y \leq -6(x - 18) - 2$ when $y = 46$?

F $x \leq 10$

G $x \leq -11$

H $x \geq -11$

J $x \geq 10$

SUBSTITUTE 46 FOR "y" AND SOLVE FOR "X".

$46 \leq -6(x - 18) - 2$

$46 \leq -6x + 108 - 2$

$46 \leq -6x + 106$

$-106 \quad -106$

$\frac{-60}{-6} \leq \frac{-6x}{-6}$ FLIP SIGN

$10 \geq x$

$x \leq 10$

Inequalities

25 Which inequality is equivalent to $-3x + 2y > 5y + 9$?

A $y > x + 3$

B $y > -x - 3$

C $y < x - 3$

D $y < -x - 3$

INPUT INTO DESMOS AND COMPARE GRAPHS

37 Which of the following describes all the solutions to the inequality $5x + 7y \geq 22$ when $y = -4$?

A $x \leq 10$

B $x \leq -10$

C $x \geq 10$

D $x \geq -10$

SUBSTITUTE -4 FOR "y" AND SOLVE FOR X.

OR

TYPE INTO DESMOS AND CHECK WHAT VALUES OF "X" ARE IN THE GRAPH.

$5x + 7(-4) \geq 22$

$5x - 28 \geq 22$

$+28 \quad +28$

$5x \geq 50$

$\frac{5x}{5} \geq \frac{50}{5}$

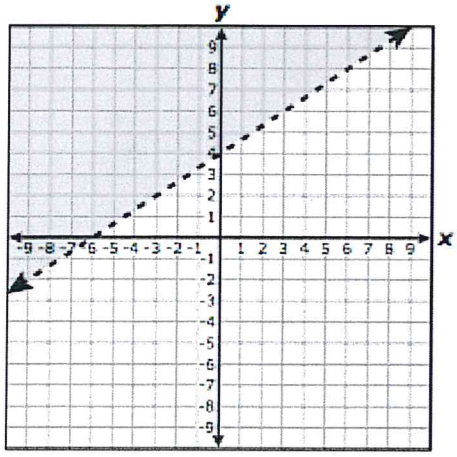
$x \geq 10$

Inequalities

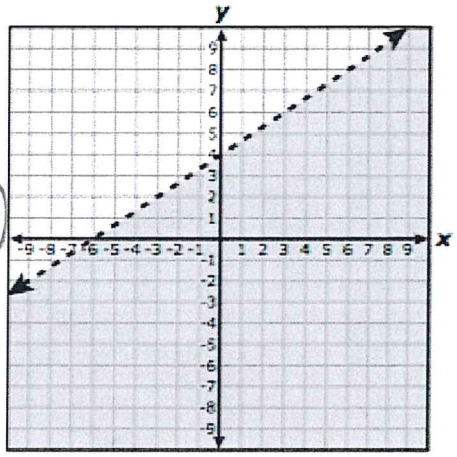
15 Which graph represents the inequality $-2x + 3y > 12$?

SOLVE FOR "y" AND GRAPH OF INPUT INTO DESMOS AND LOOK FOR GRAPH.

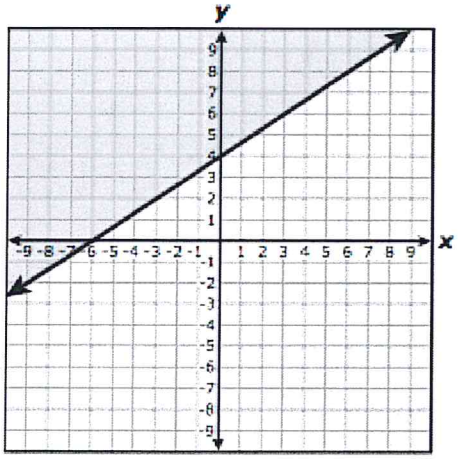
A



C



B



D