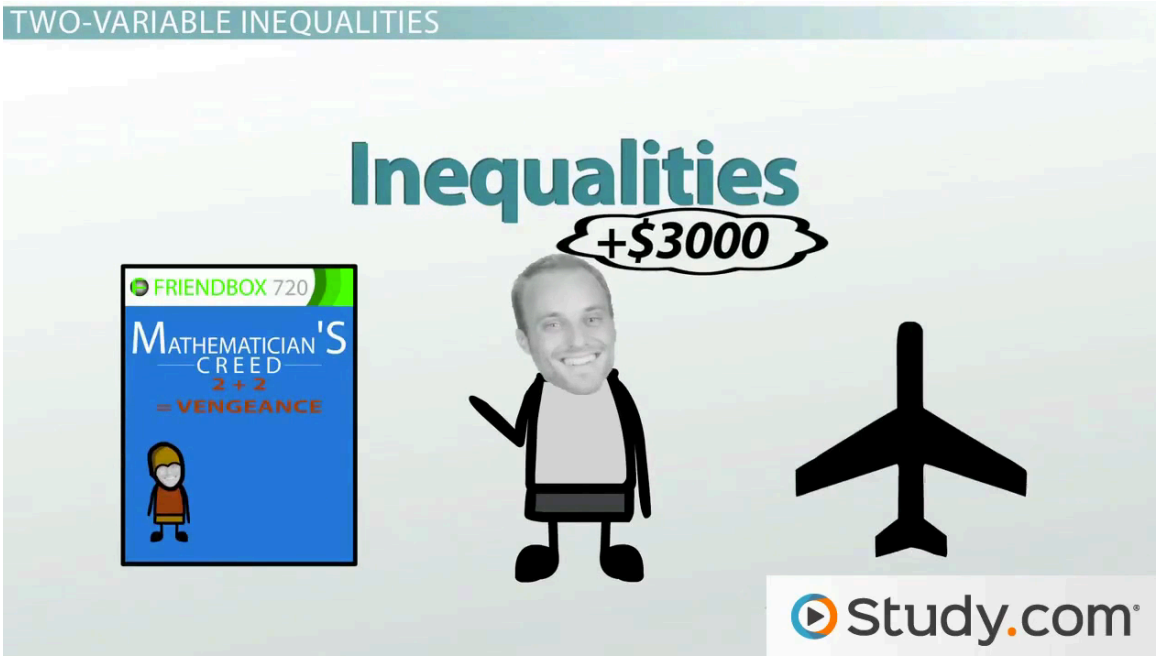
9.3 Graphing Inequalities in Two Variables

NOTES

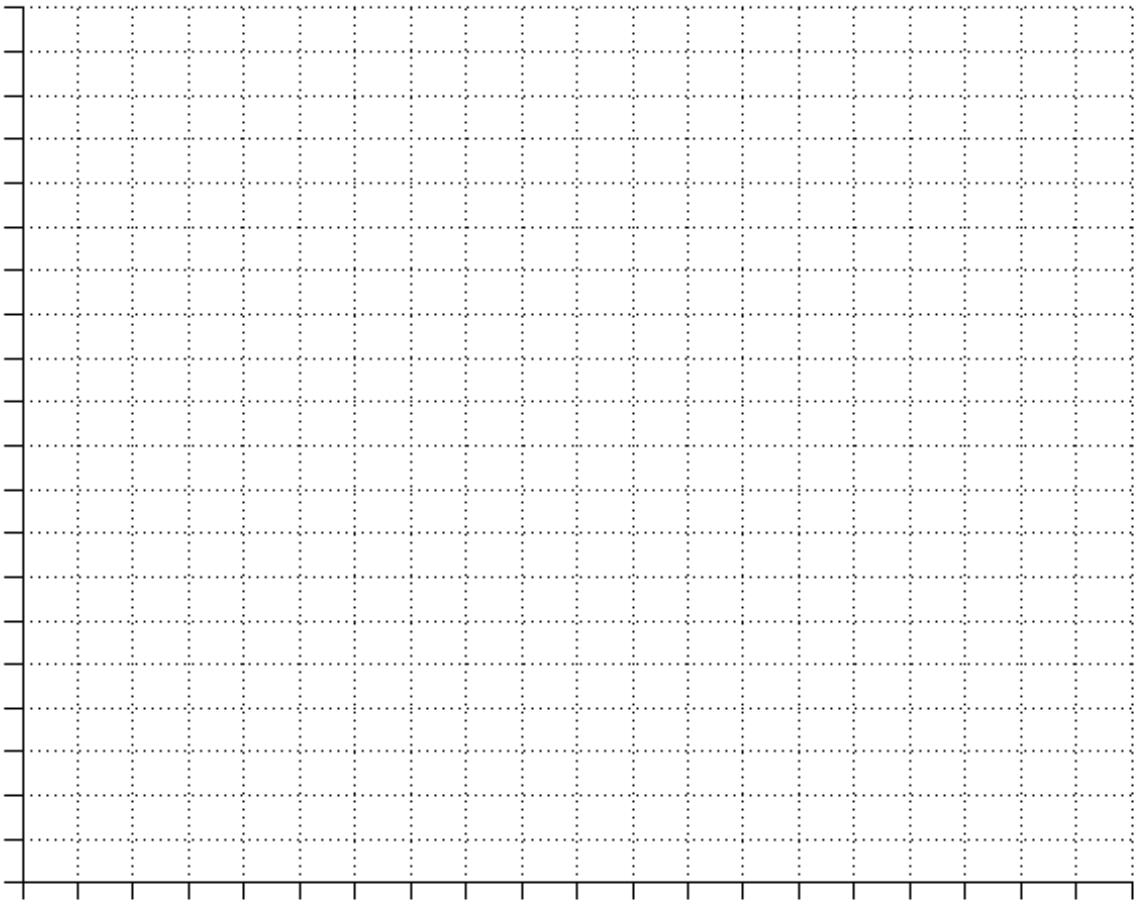
Intro Video

Write your questions here!



Two Variable Linear Equation: _____

Title: _____



Main Videos

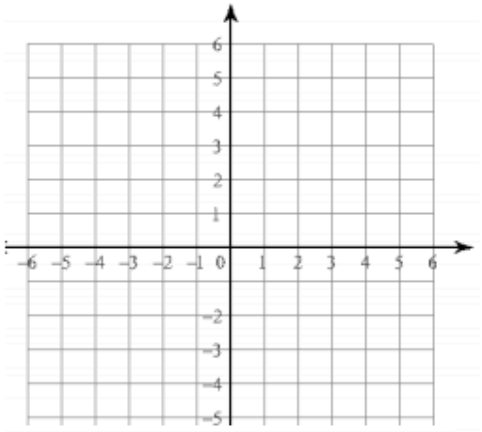
Write your questions here!

Is (4, 3) a solution to $2x - y < 4$?

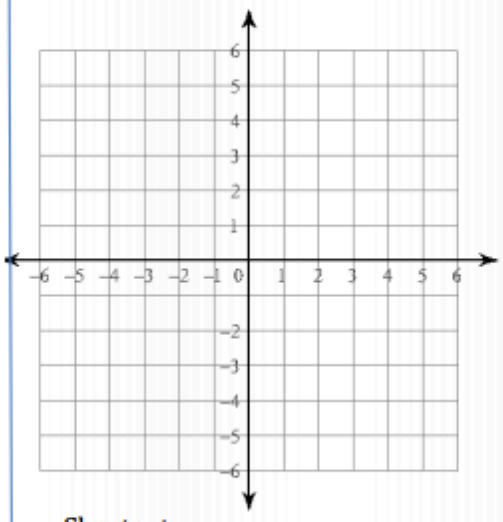
Is (-2, 0) a solution to $y < 2x + 4$?

Graph Linear Inequalities

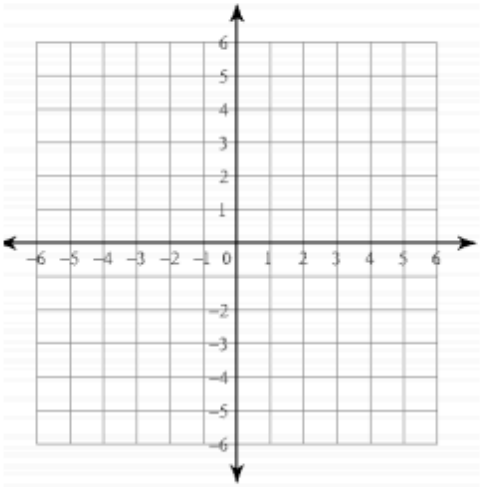
1) $y \leq -x - 3$



2) $x + 4y > -20$



3) $y < -\frac{6}{5}x + 1$



Shortcut....

If $y > mx + b$ or $y \geq mx + b$, then

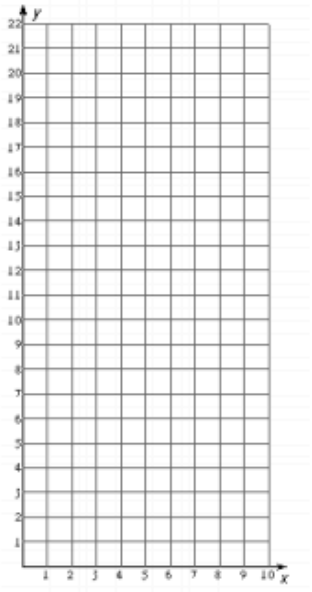
If $y < mx + b$ or $y \leq mx + b$, then

Mr. Kelly and Mr. Brust are raising funds for a big trip to Graceland. Mr. Kelly makes about $15 for every hour he works and Mr. Brust makes about $5 for every hour he works. They figure they need to make at least $100 to go.

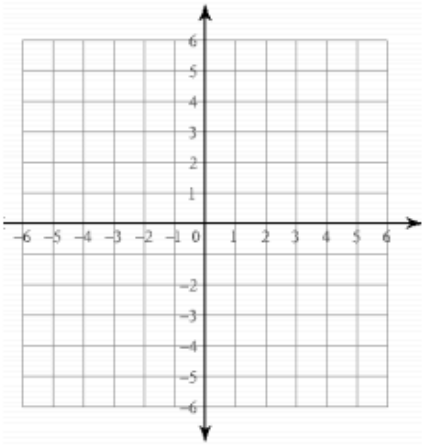
a) Write an inequality.

b) Graph it.

c) What are three possible combinations that would allow them to go to Graceland?



Graph it! $5x + 4y \leq -12$



SUMMARY:

Now, summarize your notes here!

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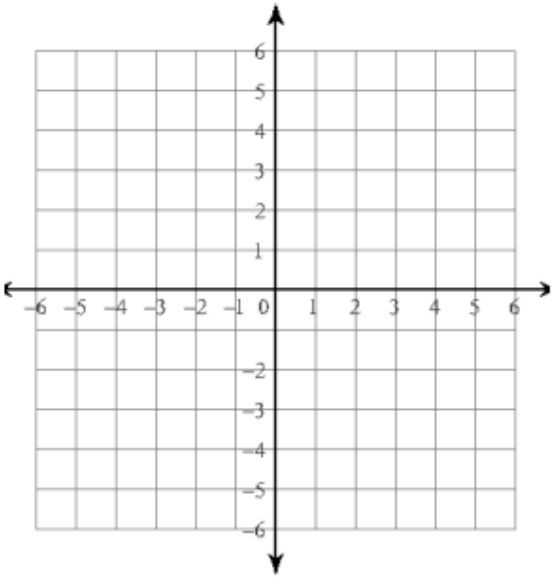
PRACTICE

Directions: Tell whether the ordered pair is a solution of the inequality.	
1) $x \geq -3$; (-4, 0)	2) $\frac{3}{4}x - \frac{1}{3}y < 6$; (-8, 12)

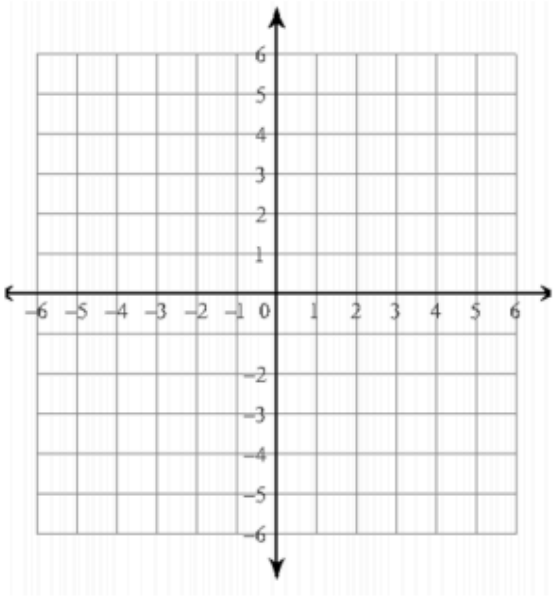
3) Which ordered pair is not a solution of $x + 5y < 15$?
a) (-1, -3) b) (-1, 3) c) (1, 3) d) (3, 2)

Directions: Graph the Inequality.

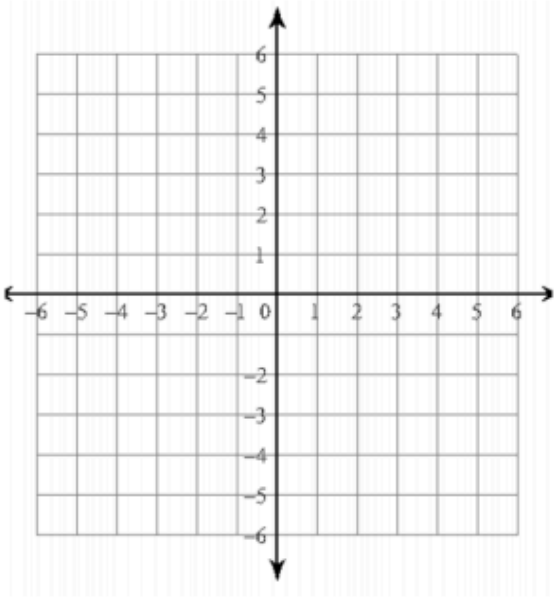
4) $y > x + 3$



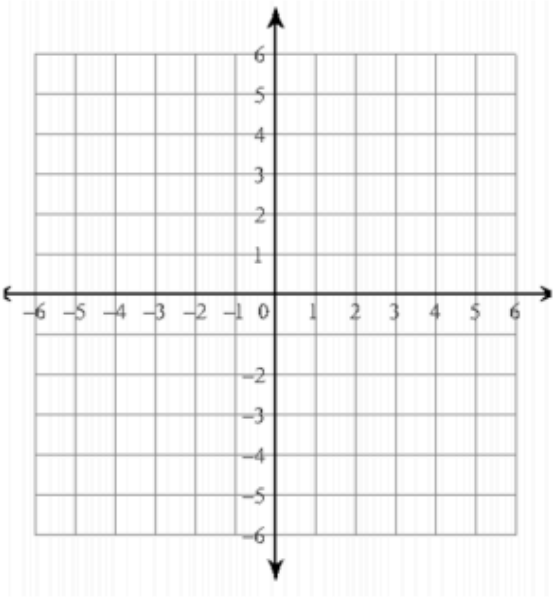
5) $y < 3x + 5$



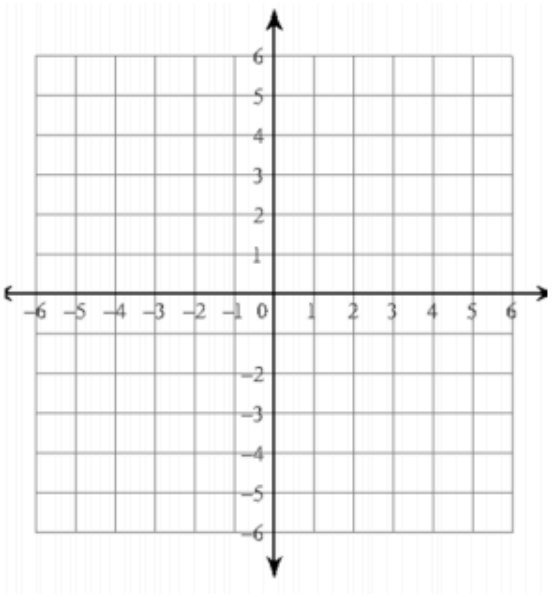
6) $x + y < -6$



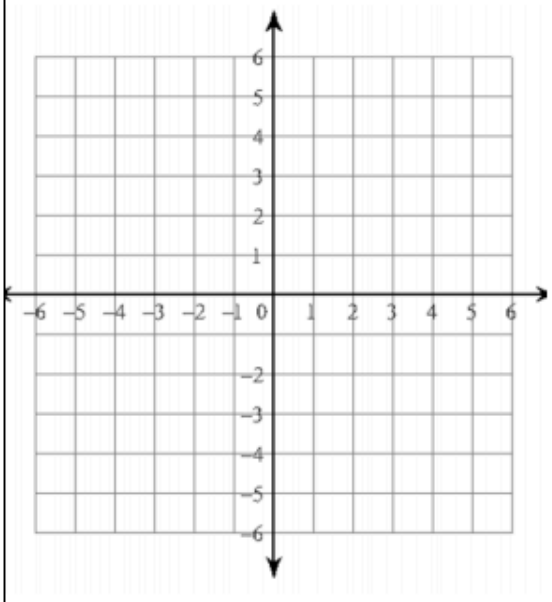
7) $x + 4y > 8$



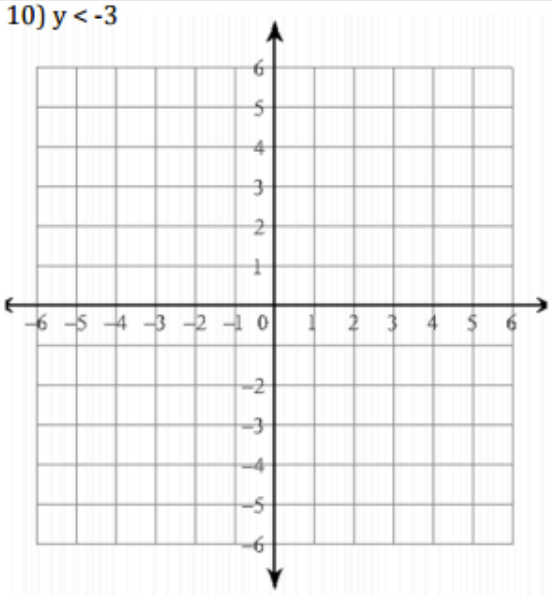
8) $2(x + 12) > 8y$



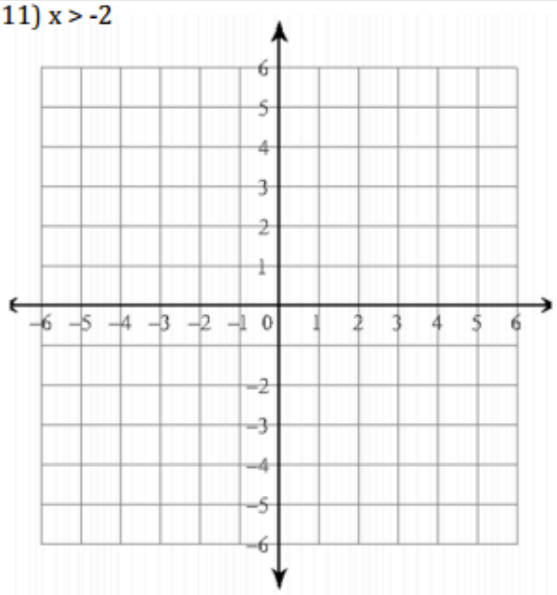
9) $-4y \leq 16x$

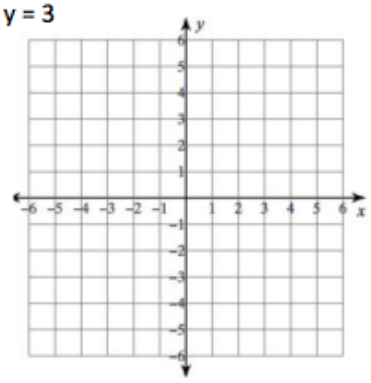


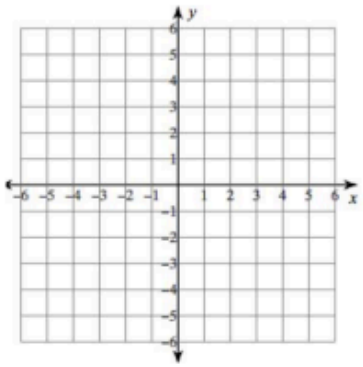
10) $y < -3$



11) $x > -2$



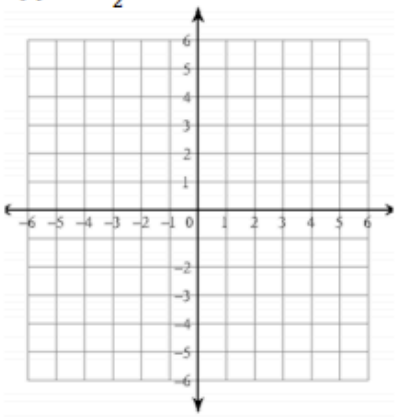
Skillz Review		
Graph the line.	Evaluate.	Solve.
1) $y = 3$ 	2) $-m^2 - 2n^3$, *when* $m = -6$ *and* $n = -2$	3) $2(6n - 3) = 34 + 7n$

4) $y = x + 4$	5) $h^4 - 2h^3, when\ h = -2$	6) $10 + 7 + 6n - 5 = 6 + 5n$
		

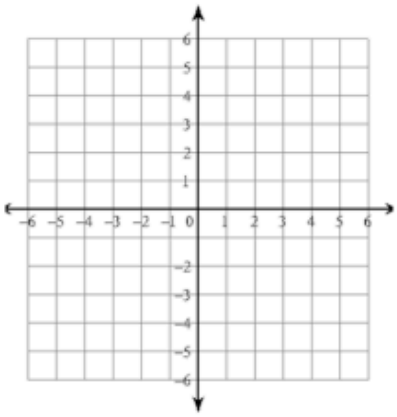
7.3 Graphing Inequalities in Two Variables

APPLICATION

1) $y \geq -\frac{3}{2}x - 2$



2) $5x + 4y \leq -4$



3) Mr. Kelly, Mr. Brust and Mr. Sullivan all met by one common interest, THE BOBSLED! In fact they were pretty darn good. In fact they were just one-thousandth of second from qualifying for the medals at the 1998 Nagano, Japan Winter Olympics. While bobsledding they had to maintain a balance in terms of weight. The weight of the bobsled combined with the weight of the three men couldn't be over 1200 pounds.

a) Make an inequality where x represents the weight of the bobsled and y represents the weight of the three men.

b) If the bobsled weighed 480 pounds what are all the possible weights of the three men combined?

c) Could the bobsled weigh 520 pounds and the men weigh 685 pounds? Why or why not?

4) Timmykat wants to start losing some weight. He goes to the doctor and the doctor tells him that he needs to burn off 600 calories a day or more. TK loves riding his bike but he only burns 10 calories a minute that way. When TK runs he loses 15 calories a minute.

a) Make an inequality where x represents the number of minutes biking and y represents the number of minutes running.

b) If Timmykat bikes for 30 minutes and doesn't run at all will he burn enough calories?

c) If Timmykat runs for 30 minutes and doesn't bike at all will he burn enough calories?

d) Graph the inequality.

e) What are three different scenarios where Timmykat will burn at least 600 calories a day?