

GRAPHING LINEAR INEQUALITIES

CONTINUOUS DATA

DISCRETE DATA

- IT ALLOWS FOR ALL TYPES OF NUMBERS, EG FRACTIONS, DECIMALS ETC. ONLY SOME TYPES OF NUMBERS ARE APPROPRIATE
- IT ONLY INCLUDES POSITIVE ETC.

INEQUALITIES

$>$

$<$

\geq

\leq

GREATER THAN

LESS THAN

GREATER THAN OR EQUAL TO

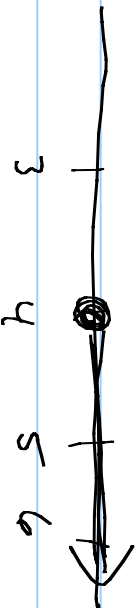
LESS THAN OR EQUAL TO

* IF THE INEQUALITY HAS A \geq OR \leq THE BOUNDARY LINE (THE LINE YOU GRAPH) IS SOLID

* IF $>$ OR $<$, A DASHED LINE - - - - -

ONE VARIABLE INEQUALITY

IF $x \geq 4$



$x < -3$



- STEPS TO GRAPHING LINEAR INEQUALITIES

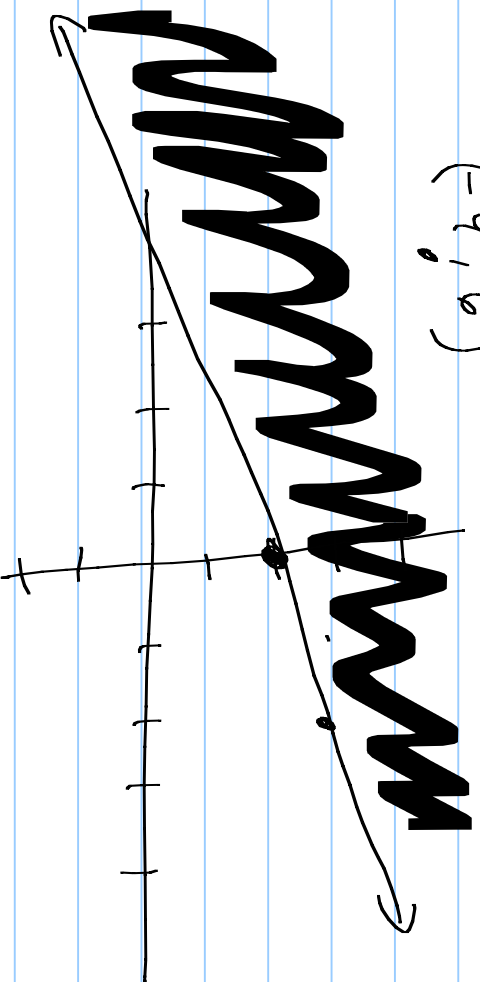
(1) MAKE SURE YOUR EQUATION IS IN $y = mx + b$ FORM

(2) GRADIENT THE LINE \Rightarrow SOLID OR DASHED
 $\geq \leq$ $> <$

(3) IF \geq OR $>$ SHADE ABOVE THE LINE
 \leq OR $<$ SHADE BELOW THE LINE

IF GRADIENT $y \geq \frac{1}{2}x + 2$

Slope IN THE FORM $y = mx + b$, m (SLOPE) $= \frac{1}{2}$, b (y-INT) $= 2$
 $(-y, b)$



THE GRAPH $2x - 3y < 6$ ~~IF~~ IF YOU DIVIDE BY

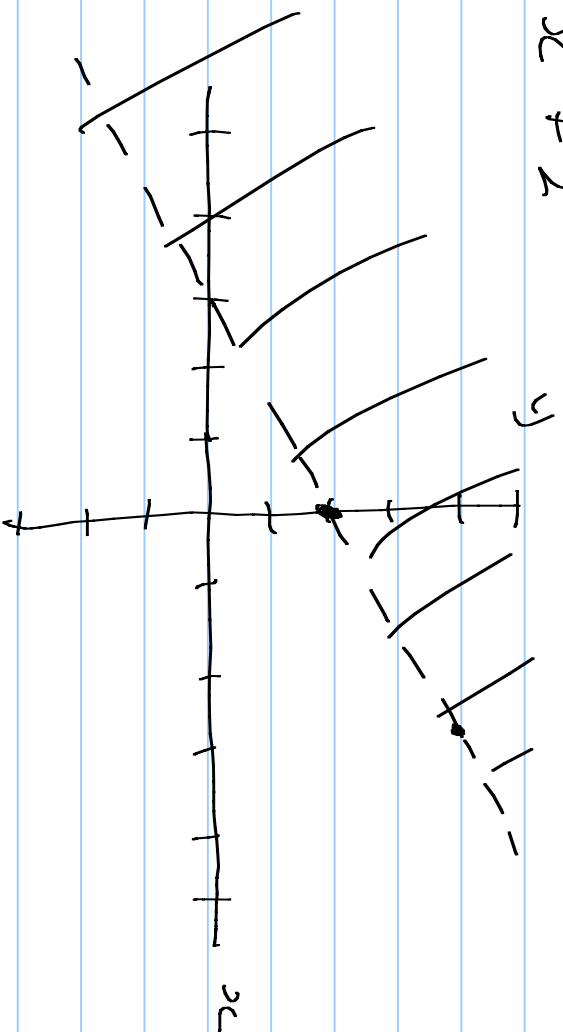
Solve $\cancel{2x} - 3y < 2$ A NEGATIVE NUMBER,
 $\cancel{-2x}$ $-2x$

$$\frac{-3y}{-3} < \frac{-2x + 6}{-3}$$

CHANGE THE DIRECTION
OF THE INEQUALITY

$$y > \frac{2}{3}x + 2$$

DASHED



THE FUNDRAISING EVENT, \$8 / TICKET SOLD AND
\$2 / HAMBURGER SOLD. YOU WANT TO RAISE
AT LEAST \$500

A) WRITE A LINEAR INEQUALITY

B) GRAPH IT

C) DETERMINE A REASONABLE SOLUTION

SOLN A) LET x = NUMBER OF TICKETS SOLD

y = NUMBER OF HAMBURGERS SOLD

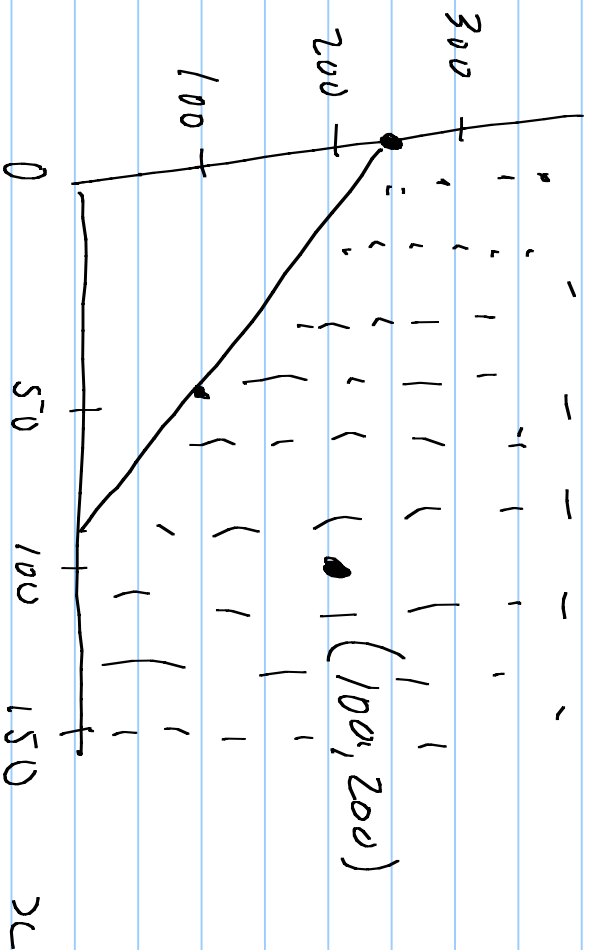
$$8x + 2y \geq 500$$

$$B) \quad -8x \qquad -8x$$

$$\frac{2y}{2} \geq \frac{-8x + 500}{2}$$

$$y \geq -4x + 250$$

c) y



$$8x + 2y \geq 500$$

$$8(100) + 2(200) \geq 500$$

$$800 + 400 \geq 500$$

$$1200 \geq 500$$

H/W

Pg 303

1, 4, 5, 8, 9