Algebra 2 2.8

Graph linear inequalities*

Graph absolute value inequalities

linear function

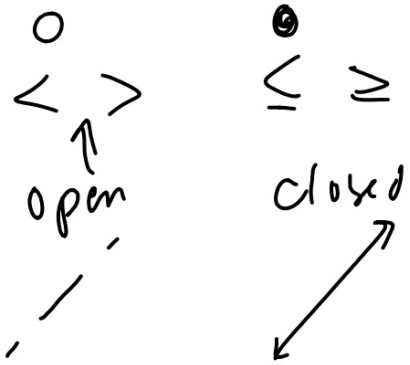
absolute value function

inequality

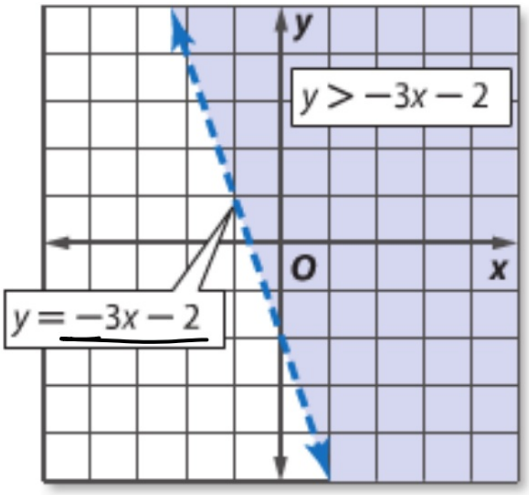
boundary (open or closed)

test point (shade where the test point is TRUE)

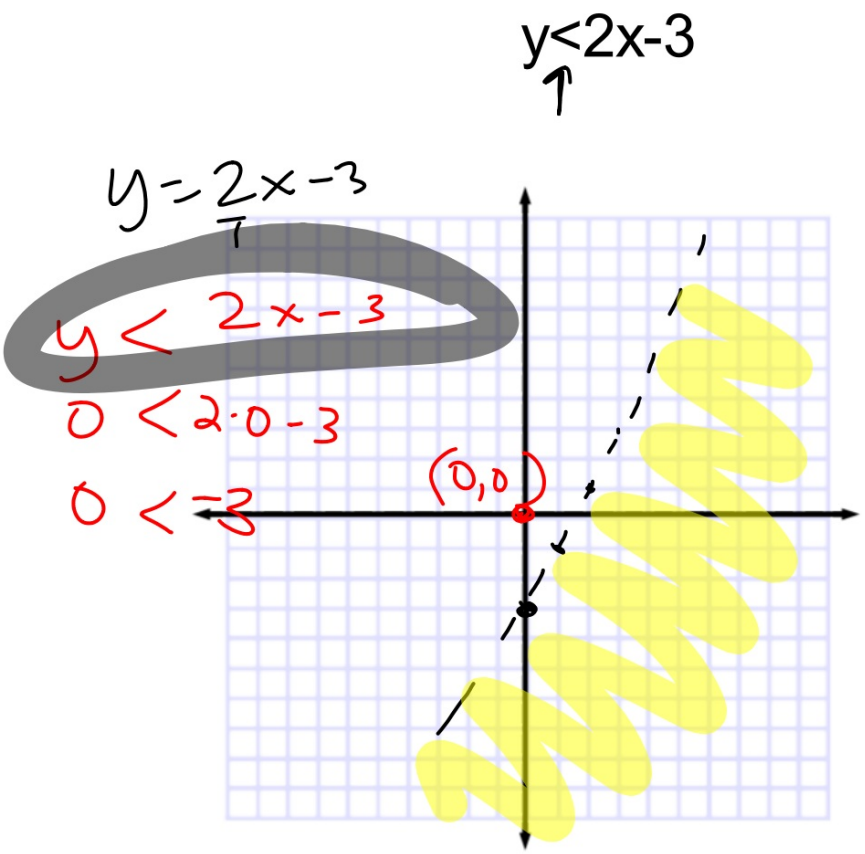
*Algebra 1



whiteboards?

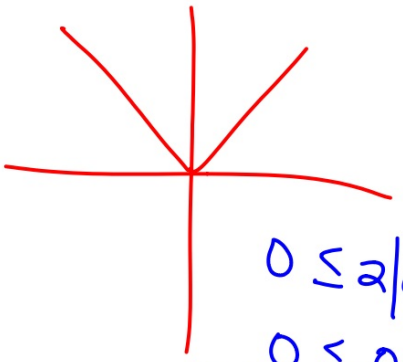


$y<2x-3$



GuidedPractice

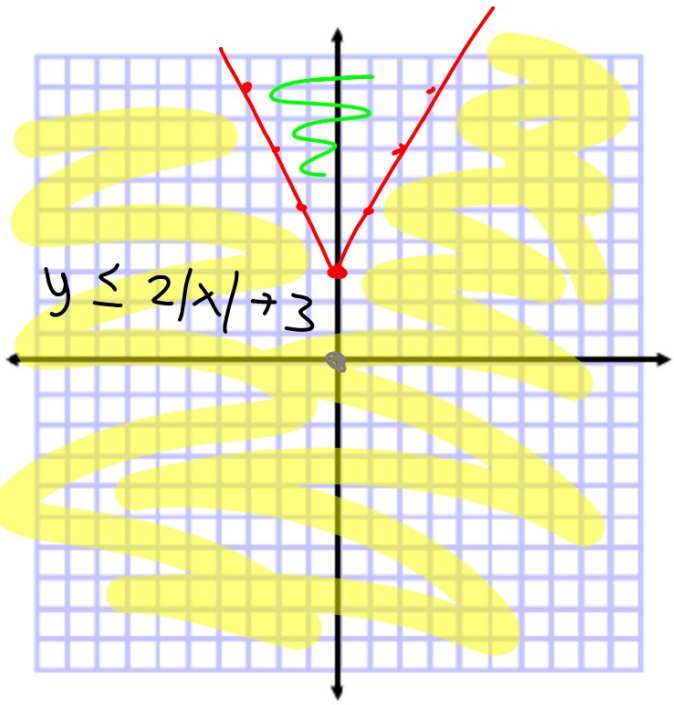
3A. Graph $y \leq 2|x| + 3$.



$0 \leq 2|0| + 3$

$0 \leq 0 + 3$

$0 \leq 3$



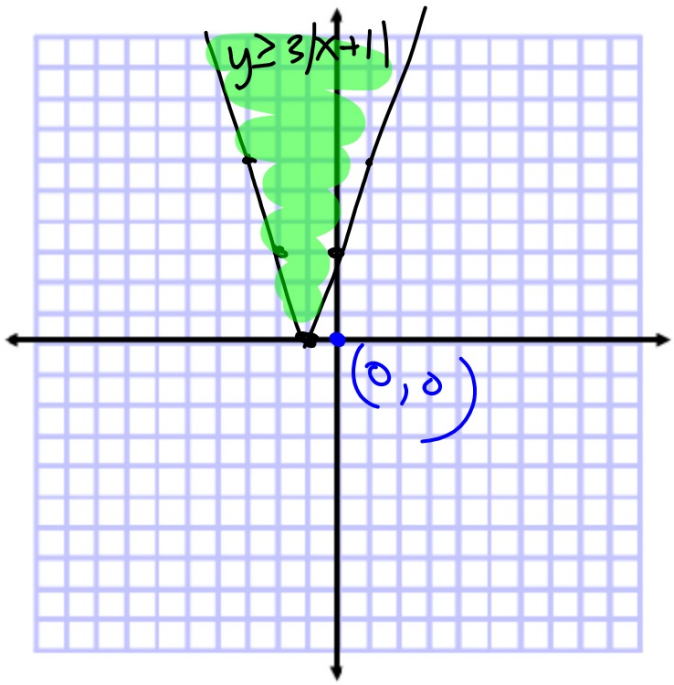
Nonlinear boundaries

3B. Graph $y \geq 3|x+1|$.

$0 \geq 3|0+1|$

$0 \geq 3 \cdot 1$

$0 \geq 3$



$0.5H + 1F \leq 20$

Real-World Example 2 Solid Boundary

RECREATION A recreation center offers various 30-minute and 60-minute art classes. The recreation director has allotted up to 20 hours per week for art classes.

a. Write an inequality to represent the number of classes that can be offered per week. Graph the inequality.

b. Can the recreation director schedule 25 of the 30-minute classes and 15 of the 60-minute classes during a given week? Explain your reasoning.

(F, H) (15, 25)

not → $0 + 0 \leq 20$

$12.5 + 15 \leq 20$

$0.5H + 1F \leq 20$

$-1F \quad -1F$

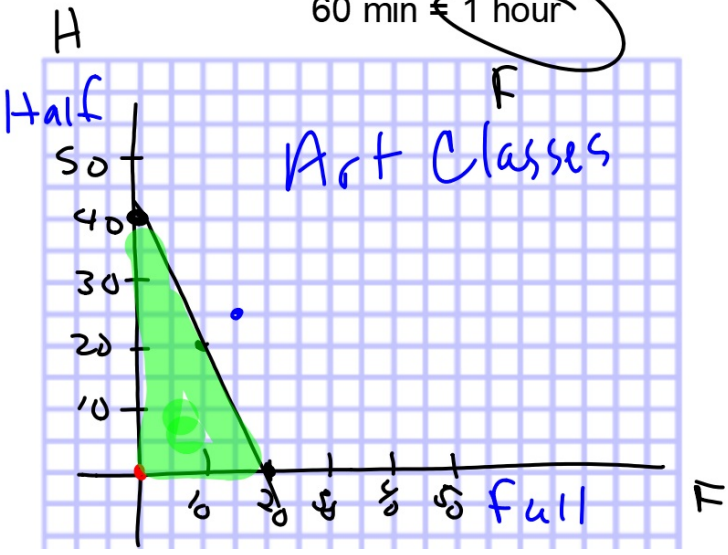
$2\left(\frac{1}{2}h \leq -F + 20\right)$

$h \leq \frac{-2}{1}F + 40$

$\frac{-20}{10}$

H

hint: 30 min = .5 hours
60 min = 1 hour



g L

5. CCSS **MODELING** Gregg needs to buy gas and oil for his car. Gas costs \$3.45 a gallon, and oil costs \$2.41 a quart. He has \$50 to spend.

a. Write an inequality to represent the situation, where g is the number of gallons of gas he buys and q is the number of quarts of oil.

b. Graph the inequality.

c. Can Gregg buy 10 gallons of gasoline and 8 quarts of oil? Explain.

$0 + 0 \leq 50$

$3.45g + 2.41L \leq 50$

$-3.45g \qquad -3.45g$

$3.45(10) + 2.41(8) \leq 50$

$\frac{2.41L}{2.41} \leq \frac{-3.45g + 50}{2.41}$

$L \leq -1.43g + 20.75$

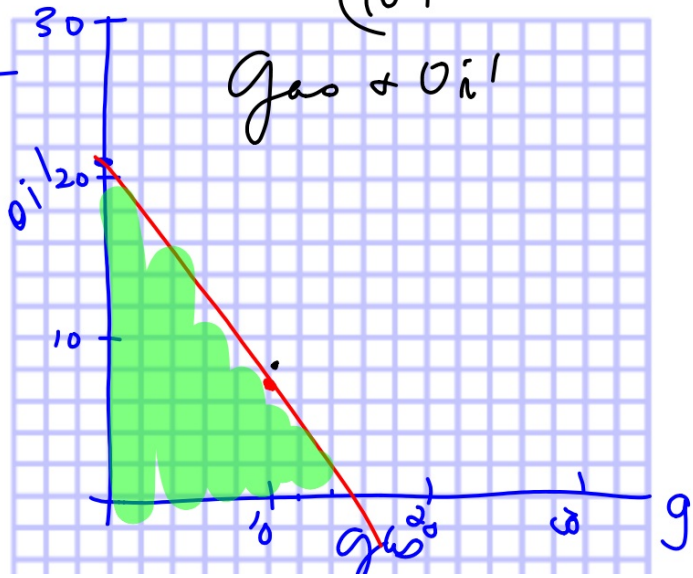
$L < -1.4g + 20.8$

-14

10

(g, L)

(10, 8)



21. SCHOOL DANCE Carlos estimates that he will need to earn at least $700 to take his girlfriend to the prom. Carlos works two jobs as shown in the table.

a. Write an inequality to represent this situation.

b. Graph the inequality.

c. Will he make enough money if he works 50 hours at each job?

Job	Pay
Main St. Deli	$8 per hour
Babysitting	$6 per hour

Remember to define your variables

2.8 9-27 odd

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