

Algebra I
Unit 6 Inequalities REVIEW

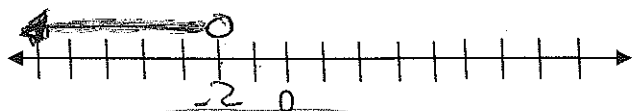
Name KEY
Period _____ Date _____

1) Fill in the chart with the symbols $<$, $>$, \leq , or \geq .

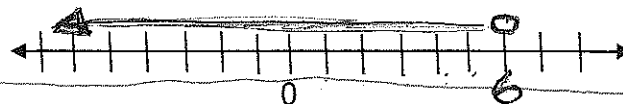
words	symbol	words	symbol
At least	\geq	Less than	$<$ Under below
At most	\leq	Less than or equal to	\leq
Fewer than	$<$	More than	$>$ Above over
Greater than	$>$	No less than	\geq
Greater than or equal to	\geq	No more than	\leq

For #'s 2 - 6, SOLVE each inequality, **BOX** answers and **GRAPH** the solution on the number line.

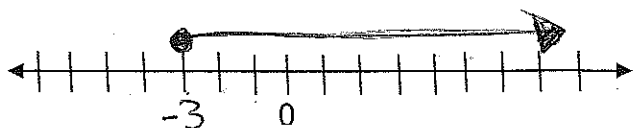
2)
$$\begin{array}{r} 10 - 6x > 22 \\ -10 \quad -10 \\ \hline -6x > 12 \\ \div -6 \quad \div -6 \\ \hline x < -2 \end{array}$$



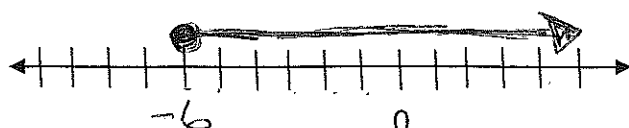
3)
$$\begin{array}{r} 6 > 6x - 3(x+4) \\ 6 > 6x - 3x - 12 \\ 6 > 3x - 12 \\ +12 \quad +12 \\ \hline 18 > 3x \\ \div 3 \quad \div 3 \\ \hline 6 > x \text{ or } x < 6 \end{array}$$



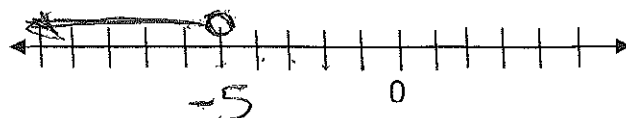
4)
$$\begin{array}{r} -4x \leq 9 \\ \div -4 \quad \div -4 \\ \hline x \geq -3 \end{array}$$



5)
$$\begin{array}{r} \frac{x}{2} \geq -2 \quad (\cdot 2) \\ \hline x \geq -4 \end{array}$$



6)
$$\begin{array}{r} 12x + 15 < 5 + 10x \\ -10x \quad -10x \\ \hline 2x + 15 < 5 \\ -15 \quad -15 \\ \hline 2x < -10 \\ \div 2 \quad \div 2 \\ \hline x < -5 \end{array}$$



write
For #'s 7 - 9, SET UP an inequality. You DO NOT need to solve it.

- 7) The difference of a number and 8 is less than 10.

$$X - 8 < 10$$

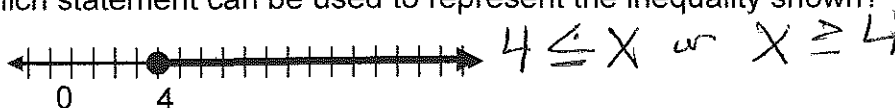
- 8) The sum of 2 times a number and 5 is greater than 25.

$$2X + 5 > 25$$

- 9) Three-fourths of a number is at least 36.

$$\frac{3}{4}X \geq 36$$

- 10) Which statement can be used to represent the inequality shown?



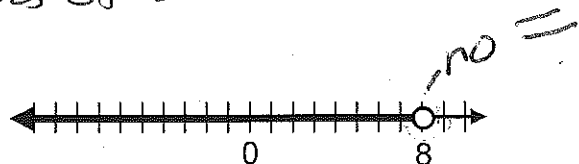
- a) I need \$4 for lunch $\rightarrow =$
 b) I need no more than \$4 for lunch ≤ 4
 c) I need at most \$4 for lunch ≤ 4
 d) I need at least \$4 for lunch ≥ 4

- 11) Write a scenario that can be represented by the inequality $x < 20$.

Jess bought a shoe tree that could hold fewer than 20 pairs of shoes.

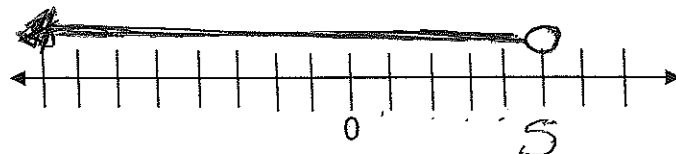
- 12) Write the inequality represented by the graph.

$$y < 8$$



- 13) Solve $5a - 5 < 20$ and graph the solution.

$$\begin{aligned} 5a - 5 &< 20 \\ +5 &+5 \\ \hline 5a &< 25 \\ \frac{5a}{5} &< \frac{25}{5} \\ a &< 5 \end{aligned}$$



- A. Name a value that is a solution on the graph above.

0

- B. Name a value that is not a solution on the graph above.

5, 6

14) It costs $\$2$ ^{rate} per hour to skate at the Frisco Mall. The video games there cost $\$1$ ^{rate} each to play. You have $\$15$ to spend on skating and video games. Write an inequality to show how many video games (g) you can play and how many hours (h) you can skate.

$$2h + g \leq 15 \quad (0, 15)$$

possible solution

15) An automobile repair shop charges a service fee of $\$50$ ^{on time} plus $\$20$ ^{rate} per hour for the mechanic's time. A customer receives an estimate of at least $\$150$ for repairing his car. Which inequality can be used to represent this situation? \geq

a) $50 + 20x \leq 150$

c) $50x + 20 \leq 150$

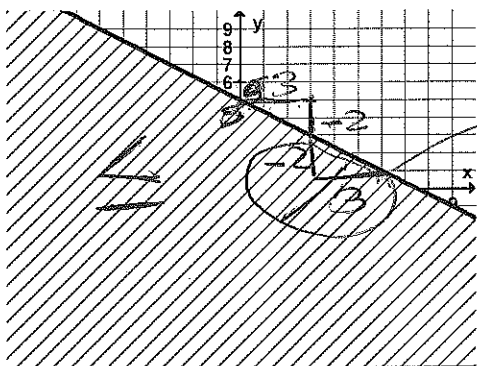
b) $50 + 20x \geq 150$

d) $50x + 20 \geq 150$

x: hours

16) Write the inequality shown in the graph below. $y \leq mx + b$

$$m = \frac{\text{rise}}{\text{run}}$$



$$m = -\frac{2}{3}$$

$$b = 5$$

$$y \leq -\frac{2}{3}x + 5$$

17) Which equation is shown by the graph at the Right?

A) ~~$y \geq 3x + 3$~~

B) $y > -1/3 x + 3$

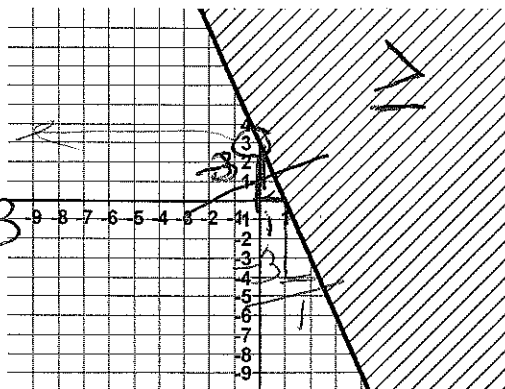
C) $y \geq -3x + 3$

D) $y \leq -3x + 3$

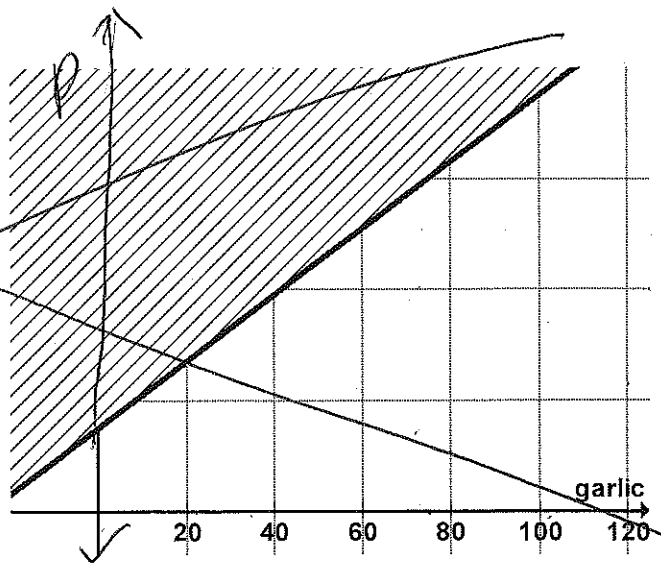
should be negative slope

$$b = 3$$

$$m = 3$$



18) Each morning at his bagel shop, Sid makes bagels. The graph shows the relationship between the number of garlic bagels, g , and the number of plain bagels, p , he makes each morning. Which statement below does **NOT** satisfy this inequality relationship?



- A) Sid made 20 garlic bagels and 150 plain bagels
- B) Sid made 100 garlic bagels and 400 plain bagels
- C) Sid made 35 garlic bagels and 175 plain bagels
- D) Sid made 75 garlic bagels and 250 plain bagels

19) Fido's vet has placed him on a diet; he is allowed no more than 1000 calories a day. Fido's dry dog food has 200 calories per cup, and his biscuits have 400 calories each. Which inequality could be used to find d , the number of cups of dry food, and b , the number of biscuits, that Fido is allowed to eat each day?

- A. $(200 + 400)(d + b) > 1000$
- B. $200d + 400b \leq 1000$
- C. $(d + 400)(b + 200) \leq 1000$
- D. $400d + 200b > 1000$

≤ 1000

d : dry
 b : biscuits

$200d + 400b \leq 1000$

20) Gold must be no more than 2800°C to be in liquid form. Which inequality best represents the situation?

- A) $t \geq 2800$
- B) $t > 2800$
- C) $t \leq 2800$
- D) $t < 2800$

t : Gold