

## CH. 9 Inequalities Assessment

Name \_\_\_\_\_ PER \_\_\_\_\_ DATE \_\_\_\_\_

AREIB3	AREID12	ACED1

*Computation*

4	3	2	1
Response has no recall errors, <i>minimal</i> procedural errors* and no conceptual errors**	Response has no recall errors, minimal procedural errors and <i>minimal</i> conceptual errors	Response has no recall errors, but has several procedural errors <u>OR</u> several conceptual errors	Recall errors exist <u>OR</u> Steps taken are not related to problem <u>OR</u> Response left blank

*Written Responses*

4	3	2	1
Response is written in a complete sentence and uses appropriate academic vocab	Response is written in a complete sentence, and minimal errors exist in use of academic vocab	Response is not written in a complete sentence <u>OR</u> no academic vocab	Concept of response is not related to problem <u>OR</u> Response is left blank

\*Procedural errors are mistakes made in the math

\*\*Conceptual errors are mistakes made in the steps one take

1. (AREIB3) Show your work neatly and circle the correct answer(s).

What is the solution to the inequality?

$$-3(4x + 1) \geq 5(2 - x)$$

A.  $x \leq \frac{13}{7}$

**B.**  $x \leq -\frac{13}{7}$

C.  $x \geq \frac{13}{7}$

D.  $x \geq -\frac{13}{7}$

$$\begin{array}{r} -12x - 3 \geq 10 - 5x \\ +5x \qquad \qquad +5x \end{array}$$

$$\begin{array}{r} -7x - 3 \geq 10 \\ +3 \qquad +3 \end{array}$$

$$\begin{array}{r} -7x \geq 13 \\ -7 \qquad -7 \end{array}$$

$$x \leq -\frac{13}{7}$$

2. (ARIEB3) Show your work neatly, box the resulting inequality and then draw its graph.

What is the solution to the inequality below?

$$2(x - 1) - 4(x + 2) < 5x$$

$$2x - 2 - 4x - 8 < 5x$$

$$\begin{array}{r} -2x - 10 < 5x \\ +2x \qquad \qquad +2x \end{array}$$

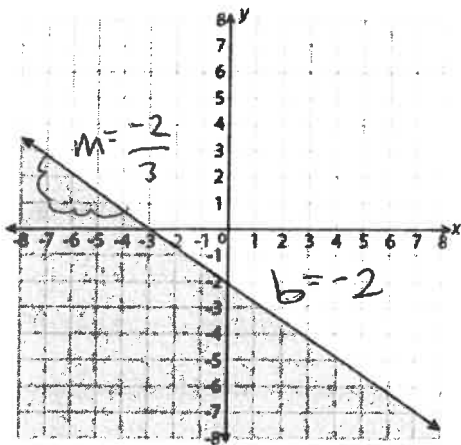
$$\begin{array}{r} -10 < 7x \\ 7 \qquad 7 \end{array}$$

$$\frac{-10}{7} < x$$



3. (AREID12) Explain your answer and cite two specific pieces of evidence in your explanation.

What inequality represents the graph below?



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

The inequality  $y \leq -\frac{2}{3}x - 2$  matched the graph above since its symbol tells us that the graph needs to be shaded below the line and the line is solid. The symbol is "less than or equal to."

4. (AREID12) Graph the solution set for the system of inequalities below.

$$\begin{cases} y < 2x \\ y > \frac{1}{3}x + 1 \end{cases}$$

Test (0,0)

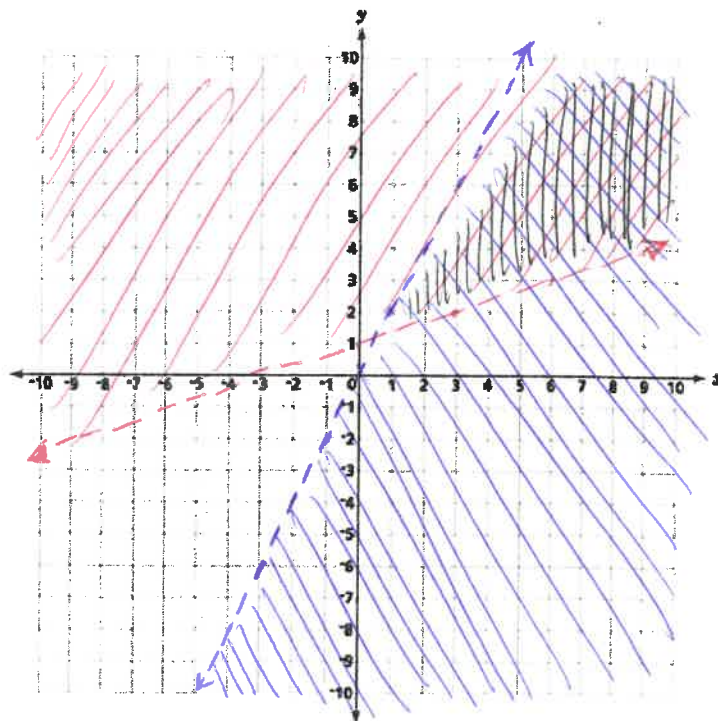
$$0 < 2(0)$$

$$0 < 0$$

Test (1,1) ← Not on line!

$$1 < 2(1)$$

$$1 < 2 \text{ True!}$$



Test (0,0)  
 $0 > \frac{1}{3}(0) + 1$   
 $0 > 1$   
 Not true!

5. (ACED1) Write and solve an inequality that models this situation. Then, write your answer in a complete sentence in the space below.

Tracy has  $\$35$  to buy comic books and to pay for a movie ticket. Each comic book costs  $\$3$ . The movie ticket costs  $\$10$ . Write and solve an inequality that can be used to determine how many comic books,  $b$ , Tracy can buy.

Starting value  
value  
(since you're  
only  
buying one)

$$\begin{array}{r} 3b + 10 \leq 35 \\ -10 \quad -10 \\ \hline 3b \leq 25 \\ \underline{\quad 3} \quad \underline{\quad 3} \\ b \leq 8.\overline{33} \end{array}$$

Tracy can  
but  
at most  
8 comic  
books w/  $\$35$

6. (ACED1) Write and solve an inequality that models this situation. Then, write your answer in a complete sentence in the space below.

Each coffee at Coffee Land costs  $\$3.25$ . Chris has  $\$20$  to buy coffee and to pay for a music album to listen to while he studies Geometry. The music album costs  $\$9.99$ . Write and solve an inequality that can be used to determine how many coffees,  $c$ , Chris can buy.

$$\begin{array}{r} 3.25c + 9.99 \leq 20 \\ -9.99 \quad -9.99 \\ \hline 3.25c \leq 10.01 \\ \underline{\quad 3.25} \quad \underline{\quad 3.25} \\ c \leq 3.08 \end{array}$$

$$\begin{array}{r} 3.25c \leq 10.01 \\ \underline{\quad 3.25} \quad \underline{\quad 3.25} \\ c \leq 3.08 \end{array}$$

$$c \leq 3.08$$



Chris can buy at most 3 coffees  
with  $\$20$