Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Per: \_\_\_ Formative Scores: #1:\_\_\_\_\_ #2:\_\_\_\_\_ #3:\_\_\_\_\_ #4:\_\_\_\_\_ #5: \_\_\_\_\_

**Inequalities Learning Targets CheckPoint**

**Learning Target #1:** “I understand all of the symbols associated with inequalities and understand what a solution set represents.”

1. 9-108. Determine if the following statements are true or false. Homework Help ✎



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1. Explain when to use an open boundary point.
2. Explain when to use a closed boundary point.
3. Explain when to use a dashed boundary line.
4. Explain when to use a solid boundary line.
5. What does the solution set represent?

**Learning Target #2:** “I can create, solve, and graph inequalities in one variable.” A-CED.1, A-REI.3

1. 9-107. Write the inequality that represents the $x$-values highlighted on each number line below. Homework Help ✎



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1. Is 7a, is 6 included in the solution set? Why or why not?
2. In 7b, is 1 included in the solution set? Why or why not?
3. 9-116. Solve the following inequalities for the given variable and represent the solutions on a number line. 9-116 HW eTool (CPM). Homework Help ✎





1. A plumber is going to fix a leak at a house. In order for the job to be worth his time it needs to cost at least $350. For him to inspect the property, it will cost the home owners $10. Then his hourly rate is $68. At least how many hours would he need to work to make the job worth his time.

**Learning Target #3:** “I can create, solve, and graph inequalities in two variables.” A-REI.12

1. Explain how you know whether to shade above or below the boundary line.
2. Graph the following inequalities and shade the solution set.

 $y\leq -\frac{3}{4}x+2$ $y>3x-7$



1. Mr. Davis wants to score at least 6.5 points in a major chess tournament. He scores 1 point for each game that he wins and he scores 0.5 points for each game that ends in a tie. Write an inequality that represents the number of games Mr. Davis should win ($x$) and the tie ($y$) to achieve his goal. Graph the solution set.



**Learning Target #4:** “I can graph the solution set to a system of linear inequalities in two variables.” A-REI.12

1. What is the solution set to a system of linear inequalities?
2. 9-106. Graph and shade the solution for the system of inequalities below. Homework Help ✎



$$y \geq \frac{3}{4}x - 2$$

$$y < -\frac{1}{2}x + 3$$

1. 9-110. For the Spring Festival, the Math Club is selling rulers for $1 and compasses for $2.50. 9-110 HW eTool (Desmos). Homework Help ✎
2. While the club would like to sell as many items as they can to raise funds, they need to make at least $15.00 to break even. Write an inequality to represent this situation. Let $r$ = the number of rulers sold and $c$ = the number of compasses sold.
3. School rules state that the club can sell a maximum of 25 items for the festival. Write an inequality for this constraint (limitation).
4. Graph the inequalities from parts (a) and (b) on the same set of axes so that compasses are represented on the $x$-axis and rulers are represented on the $y$-axis. Find the region of points that are solutions to each of them. Can this region fall below the$ x$-axis or to the left of the $y$-axis? Why or why not?



1. What do the points in the solution region represent?

**Learning Target #5:** “I can interpret solutions as viable (practical, realistic, usable) or nonviable (not practical, realistic, usable) within context.” A-CED.3

1. What does viable mean?
2. What does non-viable mean?
3. Explain what a viable solution is.
4. Explain what a non-viable solution is.
5. Look at problem #8. Choose a viable solution and explain what it means in context.
6. Look at problem #8. Choose a non-viable solution and explain what it means in context.
7. Look at problem #10. Choose a viable solution and explain what it means in context.
8. Look at problem #10. Choose a non-viable solution and explain what it means in context.
9. Look at problem #12. Choose a viable solution and explain what it means in context.
10. Look at problem #12. Choose a non-viable solution and explain what it means in context.

**\*\*\* EXTRA CREDIT**: Create an inequality context problem that would include 2 variables (x and y). Next, create the inequality and graph the solution set. Lastly, choose two solutions, one viable and one non-viable, and explain what the solution point represents.