ASSIGNMENT #8 Linear Inequalities /27



1. Write a word statement to express the meaning of each inequality. *(4 marks)*

|  |  |
| --- | --- |
| Inequality | Word Statement |
| a) *m* > –2 |  |
| b) |  |
| c) |  |
| d) *m* ≥ 2 |  |

*Complete the statements in #2 to 4 by inserting the symbol* <, >, ≤, or ≥. *(3 marks)*

2. Given *x* + 5 ≥ 12, the solution set is *x* \_\_\_\_ 7.

3. For the inequality 3x – 2 < 12, the solution set is *x* \_\_\_\_ 5.

4. The solution set for –10 ≤ 5*x* + 10 is *x* \_\_\_\_ 4.

5. Solve each inequality. *(6 marks)*

a) *x* + 5 ≤ 12 b) 2 > *x* – 9 c) 7.4 + *x* ≥ 6.2

d) *x* – 4.2 < 3.5 e) 4*x* ≤ –16 f) –1.3*x* > 16.9

6. Verify if the specified solution is correct for each inequality. *(6 marks)*

a) 2*x* < –10; *x* > –5 b) –3*x* ≤ –24; *x* ≤ 8 c) –9 ≥ –*x*; 3 ≥ *x*

d) ; *x* < 20 e) 2*x* ≥ –16; *x* ≥ –8 f) –7 + *x* > –2; *x* > –9

7. Solve. Draw a number line to represent each solution. *(4 marks)*

a) 9*x* + 4 ≤ 5*x* + 12 b) 5*x* – 2 > 9*x* – 10

8. Mr. Lau asked his class to write an inequality to represent the solution set for the number line below.

|  |  |  |
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|  | Erik | *x* ≤ –5 |
| Marissa | *x* ≥ –5 |
| Laurie | –5 ≤ *x* |
| Steven | –5 ≥ *x* |

CIRCLE which students correctly represented the solution set given by the graph? *(1 mark)*

 9. The solution set for the inequality 3(–2*x* + 15) < –21 is determined by solving for *x*. The solution is shown below.

Step 1 3(–2*x* + 15) < –21

Step 2 –6*x* + 45 < –21

Step 3 –6*x* > –66

Step 4 *x* < 11

CIRCLE the error then, write the correct solution *(3 marks)*