Unit 4: Linear Inequalities and Systems

ADVANCED · SET 2

Name: _____ Date: _____

Solve each problem and give the exact short answer. Use plain-text notation (fractions like 11/5, coordinates like (2, 5)); show all steps on separate paper.

1. Solve for x and give the boundary value: -3(2x - 5) >= 4x - 7. Write the largest value x can equal as a fraction.

Answer: _____

2. Find the smallest integer x that satisfies (5 - 2x)/3 < (x + 4)/2.

Answer: _____

3. Does the point (3, 1) satisfy BOTH inequalities of the system y < 2x - 1 and y >= -x + 4? Answer yes or no.

Answer: _____

4. How many integer values of x satisfy the compound inequality -5 <= 3x - 2 < 7?

Answer: _____

5. The solution to |2x - 3| <= 7 is an interval a <= x <= b. What is the length of that interval (b - a)?

Answer: _____

6. Solve 7 - 4x > 2x + 19 for x, then give the largest integer that satisfies it.

Answer: _____

7. Give the coordinate pair where the boundary lines of the system y = 2x + 1 and y = -x + 7 intersect.

Answer: _____

8. Find the smallest positive integer x that satisfies |3x + 6| > 12.

Answer: _____

9. For how many integers x with -10 <= x <= 10 is BOTH x - 2 > -6 and 2x + 1 <= 9 true?

Answer: _____

10. Find the smallest integer x satisfying 0.5x - 1.25 <= 0.75x + 2.5.

Answer: _____

11. Does the point (6, 3) satisfy BOTH inequalities of the system x + y <= 8 and x - y >= 2? Answer yes or no.

Answer: _____

12. Solve (2/3)x - 1/2 >= (1/6)x + 5/2 for x, then give the smallest integer solution.

Answer: _____