

Unit 4: Linear Inequalities and Systems

ADVANCED

Name: _____

Date: _____

Solve each problem completely. Give exact answers using plain-text notation (fractions like $\frac{3}{4}$, coordinate pairs like $(2, -3)$, inequalities like $x > 5$).

1. Solve for x: $-3(2x - 5) + 4 < 7x - 2(x + 6)$. Give your answer as an inequality.

Answer: _____

2. Find the sum of all integer values of x that satisfy both $3x - 7 < 11$ and $-2x + 5 \leq 13$. (i.e., x satisfies $-4 \leq x < 6$.)

Answer: _____

3. Solve the system by substitution. Give the solution as a coordinate pair (x, y): $4x - 3y = 18$ and $y = 2x - 8$.

Answer: _____

4. How many solutions does this system have? $8x - 12y = 20$ and $-2x + 3y = -5$. Answer with a number, or 'infinite'.

Answer: _____

5. A theater sells adult tickets for \$12 and child tickets for \$7. On a night when 210 tickets were sold for total revenue of \$2200, how many child tickets were sold? Answer with a number.

Answer: _____