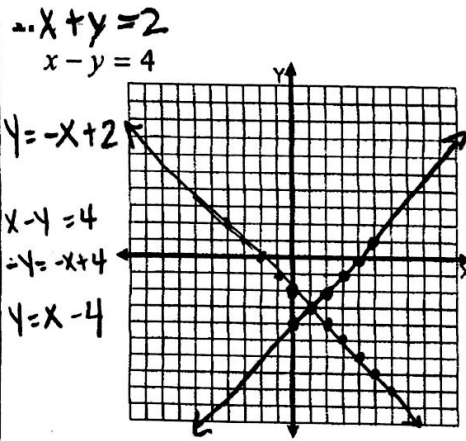
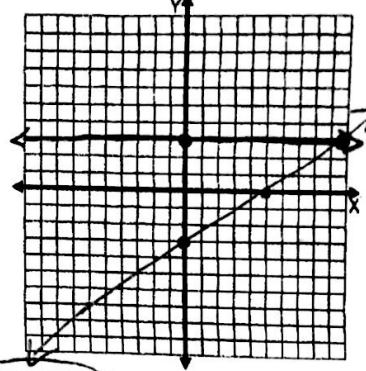


Solving by Graphing

- $(-1, 3)$
- $(10, 3)$



$-3x - 5y = 15$
 $y = 3$



Solving by Substitution

- $(5, -2)$
- $(7, 3)$

$2x + 3y = 4$
 $y = 5(5) - 27$
 $y = -2$
 $2x + 3(5x - 27) = 4$
 $2x + 15x - 81 = 4$
 $17x - 81 = 4$
 $17x = 85$
 $x = 5$

$x + 4y = 19$
 $x - 2y = 1$
 $x = 2y + 1$
 $x = 7$
 $2y + 1 + 4y = 19$
 $6y + 1 = 19$
 $6y = 18$
 $y = 3$

Solving by Elimination

- $(-1, 4)$
- ∞
- $(13/2, -2)$
- $(-3, 7)$

$x - 3y = -13$
 $3x + 7y = 25$
 $-3x + 9y = 39$
 $3x + 7y = 25$
 $16y = 64$
 $y = 4$
 $x - 3(4) = -13$
 $x = -1$

$2x + 8y = 6$
 $5x + 20y = 15$
 $-2(5x + 20y = 15)$
 $10x + 40y = 30$
 $-10x - 40y = -30$
 $0 = 0$ infinite solutions

$7x - y = 19$
 $2x - 3y = 19$
 $2x - 3(-2) = 19$
 $2x + 6 = 19$
 $2x = 13$
 $x = 13/2$
 $-21x + 3y = -57$
 $2x - 3y = 19$
 $-19y = 38$
 $y = -2$

$4x - y = -4$
 $8x + 2y = 8$
 $75x = 2y + 1$
 $5x - 2y = 1$
 $-2y - 2y$
 $-3x = 9$
 $x = -3$
 $5(-3) = 2y + 1$
 $14 = 2y$
 $y = 7$

Systems Word Problems

Burgers \$2.50
 Fries \$0.80

9. A tennis coach took his team out for lunch and bought 8 hamburgers and 5 fries for \$24. The players were still hungry so the coach bought 6 more hamburgers and 2 more fries for \$16.60. Find the cost of each.
 $2(8x + 5y = 24)$
 $5(6x + 2y = 16.60)$
 $6(2.50) + 2y = 16.60$
 $y = .80$
 $16x + 10y = 48$
 $-30x - 10y = -83$
 $14x = 35$
 $x = 2.50$

10 Adult tickets
 14 Child

10. Bob bought 24 hockey tickets for \$83. Adult tickets cost \$5.50 and child tickets cost \$2.00. How many of each did he buy?
 $(x + y = 24) \cdot 5$
 $5.50x + 2y = 83$
 $-2x - 2y = -48$
 $5.50x + 2y = 83$
 $3.5x = 35$
 $x = 10$

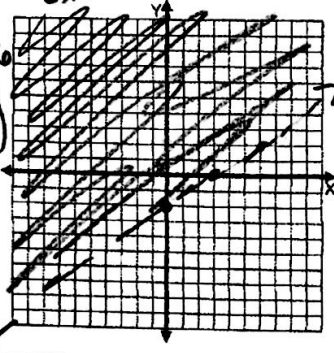
30

11. Dustin has only nickels and quarters in his piggy bank. He has 49 coins total for a combined value of \$8.85. How many of each type of coin does he have?

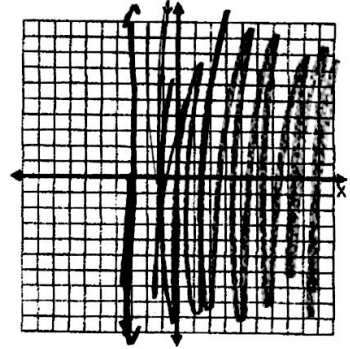
Linear Inequalities

12. $2x - 3y < 6$
 $-2x$ $-2x$

$-3y < -2x + 6$
 $y > \frac{2}{3}x - 2$

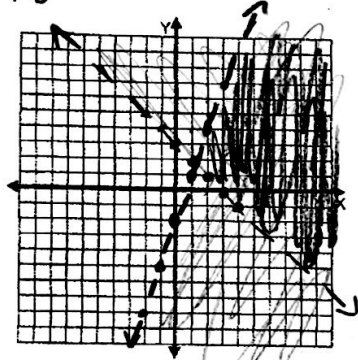


13. $x \geq -3$

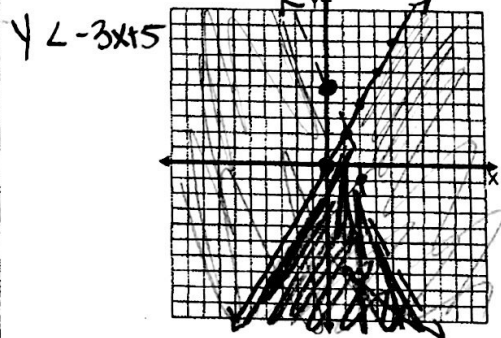


Systems of Inequalities

14. $y < 3x - 2$
 $y > -x + 3$



15. $2x - y \geq 0 \rightarrow y \leq -2x$
 $3x + y < 5$



16. A local theater has a maximum capacity of 1,000 people. For their latest production, adult tickets cost \$25 and youth tickets cost \$12.50. The theater must make at least \$15,000 for the show to go on.

a. Write and graph a system of linear inequalities:

b. Write two possible solutions:

i. _____

ii. _____

