Topics in College Algebra Practice Final

#1-4 Solve each compound inequality. Graph the solution and write the solution set using interval notation.

1. $3x+2 \geq -7$ and $4x - 7 < 5$

Interval Notation _____

2. $3x > 21$ or $2x < -22$

Interval Notation _____

3. $|x+3| < 12$

Interval Notation _____

4. $|3x-6|>-18$

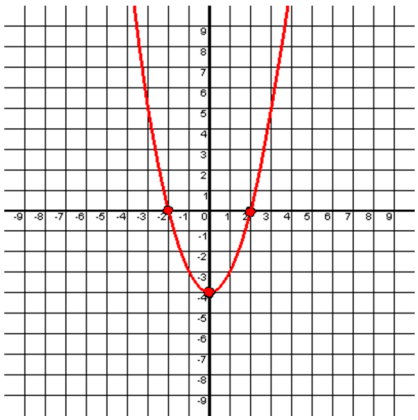
Interval Notation _____

Solve.

5. $|x+4|=12$ _____

Find the domain and range of the relation in interval notation and determine whether it is a function.

6.



Domain _____

Range _____

Function: YES or No

Given $f(x)=3x-7$ and $g(x)=9x+14$ find the following

7. $f+g$ _____

8. $f-g$ _____

Solve by graphing.

9. $y=-3x+1$
$y=2x-4$

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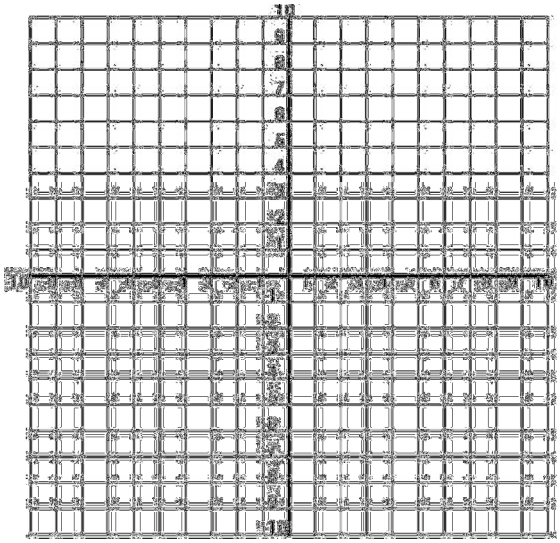

Solve using substitution.

10. $x = -3y$
$2x - 5y = 44$

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Solve using elimination.

11. $3x + 2y = -7$
$5x - 2y = -1$

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12. $7x - 4y = 4$
$5x + y = 26$

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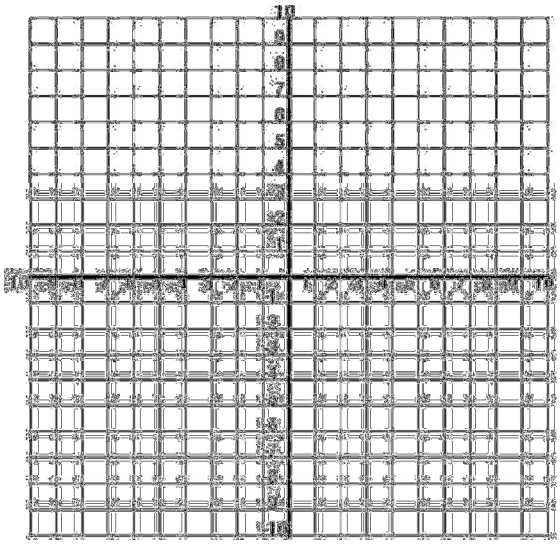
Graph the solution set for the system of inequalities.

13. $y > 3x - 1$
$y \leq -x + 2$



14. Evaluate $\sqrt{64}$ _____

15. Evaluate $\sqrt[3]{-125}$ _____

16. Evaluate $36^{\frac{1}{2}}$ _____

17. Evaluate $8^{\frac{2}{3}}$ _____

18. Write in exponential form $\sqrt[4]{x^3}$ _____

For problems 19-21, use the rules of exponents to simplify.

19. $x^{\frac{2}{7}} \bullet x^{\frac{3}{7}}$ _____

20. $\dfrac{x^{\frac{7}{9}}}{x^{\frac{1}{2}}}$ _____

21. $\left(x^{\frac{3}{4}} \right)^{\frac{4}{7}}$ _____

For problems 22-25 simplify.

22. $\sqrt{60}$ _____

23. $\sqrt[3]{250}$ _____

24. $\sqrt{6} \bullet \sqrt{15}$ _____

25. $\sqrt{18} + \sqrt{50}$ _____

For problems 26-27 solve, check your answers.

26. $\sqrt{x+2} = 8$ _____

27. $\sqrt[3]{x+2} - 1 = 2$ _____

Add

28. $(5+2i)+(3-11i)$ _____

Multiply

29. $(6-3i)(9+i)$ _____

Divide.

30. $\frac{5}{i}$ _____

31. $\dfrac{4}{3+i}$ _____

Find the power of i

32. i^{15} _____

Solve. Use any method.

33. $x^2+7x+12=0$ _____