

Honors Algebra 2
Chapters 1 through 3 Review

Key

1. Evaluate: $4c^2 - 3ac$ if $a = 4$ and $c = -2$

1. $\frac{40}{}$

2. Solve: $6 = \frac{5x+3}{3}$

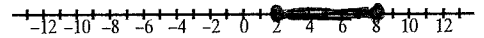
2. $\frac{x=3}{}$

3. Solve: $|2x-3|=1$

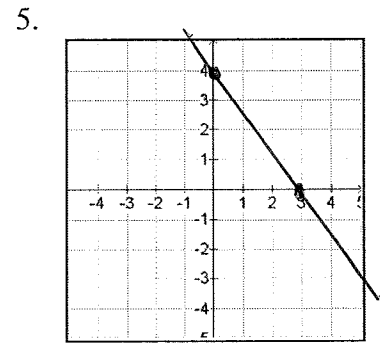
3. $\frac{x=1; x=2}{}$

4. Solve and graph the solution set: $|5-x| \leq 3$

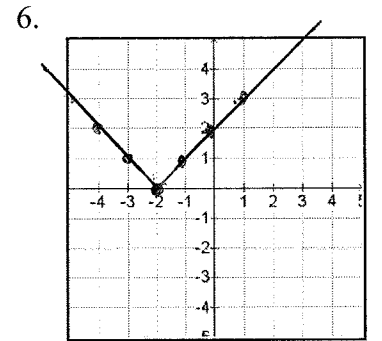
4. $\frac{2 \leq x \leq 8}{}$
See Graph, too.



5. Graph: $4x + 3y = 12$



6. Graph: $y = |x+2|$



7. Write an equation to solve the following problem: "You have \$125 to spend for your music collection. If you buy five CDs for your collection you will have \$50 left for iTunes. How much was each CD?" (Note: Just write an equation that does not involve division or subtraction, do not solve.)

7. $\frac{125 = 5x + 50}{}$

8. State the domain and range of the relation. Then state if it is a function. $\{(1, 2), (3, 2), (2, 5), (5, 2)\}$

8. D: $\{1, 2, 3, 5\}$
R: $\{2, 5\}$
Function Yes or No

9. Find the slope, x-intercept, y-intercept for $4x + 3y = 12$.

9. x-int: $\frac{3}{}$
y-int: $\frac{4}{}$
m: $\frac{-4/3}{}$

11. Find an equation of a line through $(3, -4)$ and perpendicular to the graph of $y = -2x + 3$.

$y = -2x + 5$
 $y - 9 = -2(x + 2)$
10. $y - 3 = -2(x - 1)$
11. $y + 4 = \frac{1}{2}(x - 3)$
 $y = \frac{1}{2}x - \frac{11}{2}$

12. Graph the system of inequalities.

* $x + y \leq 2$

* * $2x - 3y \geq -6$

Solve the system of equations.

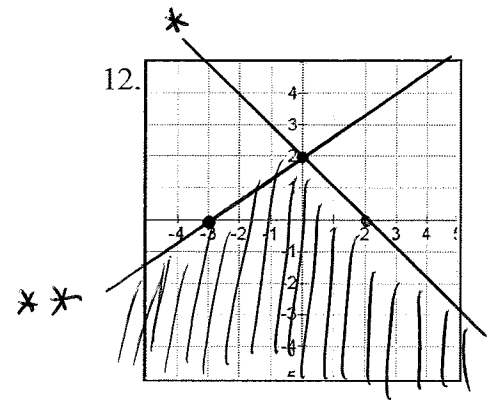
13. $7x + 2y = -1$

$4x - 3y = -13$

$x + 2y - z = 4$

14. $3x - y + 2z = 3$

$-x + 3y + z = 6$



13. (-1, 3)

14. (1, 2, 1)

Use the information in the table and your calculator to solve the following problems. The following table gives the UN estimates of the world population (in billions) every five years from 1980 – 2005.

Let $t = 0$ for 1980.

Year	1980	1985	1990	1995	2000	2005
Population (billions)	4.451	4.855	5.295	5.719	6.124	6.515

15. Find a LinReg equation of best fit for the data. Based on the equation, estimate the population (in billions) for the year 2010. (Round to three decimal places.)

15. 6.948 billion people

16. Using your equation, find the rate at which the population (in billions) is increasing each year. (Round to three decimal places.)

16. 0.083 billion people/year

17. $x =$ outdoor $y =$ indoor

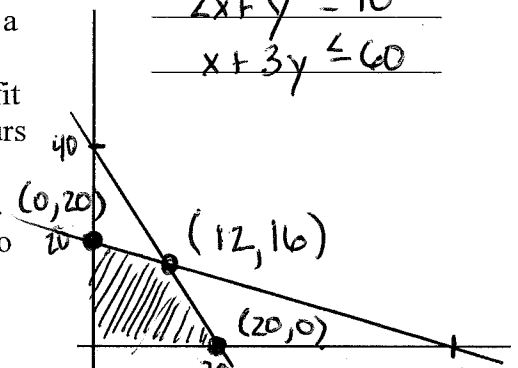
$x \geq 0; y \geq 0$

$2x + y \leq 40$

$x + 3y \leq 60$

Solve the linear programming problem.

A shoe manufacturer makes outdoor and indoor soccer shoes. There is a two-step process for both kinds of shoes. Each pair of outdoor shoes requires 2 hours in step one and 1 hour in step two, and produces a profit of \$20. Each pair of indoor shoes requires 1 hour in step one and 3 hours in step 2, and produces a profit of \$15. The company has 40 hours of labor per day available for step one and 60 hours available for step two. How many of each type of soccer shoe should the manufacturer make to maximize the profit?



17. List the constraints.

18. Graph the Constraints

19. Give the profit function.

18. $P(x, y) = 20x + 15y$

19. Outdoor: 12

Indoor: 16

20. How many of each shoe should be made?