

Math 1 Review

Show all work. All work must be done in pencil and answers highlighted.

1. Solve each of the following equations for x.

a) $3 - 2(3x + 3) = 15$

b) $\frac{3}{5}x - 2 = 7$

c) $hx + t = g$

d) $\frac{rx}{v} + 2 = s$

2. Solve each of the following systems algebraically.

a) $y = -x + 15$
 $4x + 3y = 38$

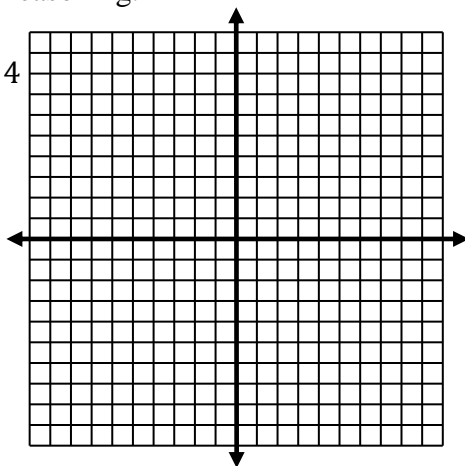
b) $2x + 8y = 8$
 $y = \frac{1}{4}x - 5$

c) $2x - 3y = 4$
 $x + 4y = -9$

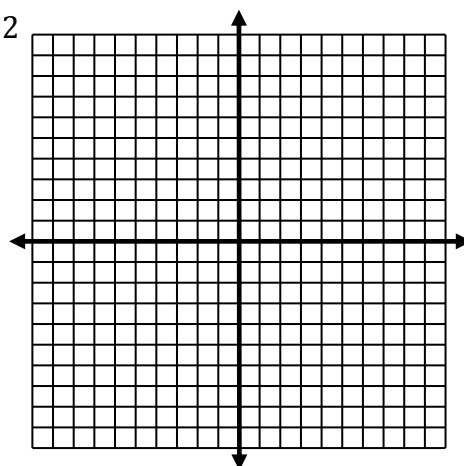
d) $3x + 5y = 10$
 $5x + 7y = 10$

3. Solve each system of inequalities. Identify the slope and y-intercept for each linear inequality. Be sure to show your reasoning.

a) $y \leq 2x - 8$
 $y > -\frac{1}{3}x + 4$



b) $2x - 3y \leq 12$
 $y > x + 1$



4. Patty makes \$8 per hour mowing lawns and \$12 per hour babysitting. She wants to make at least \$100 per week but can work no more than 12 hours a week.

a) Define variables:

b) Write an inequality that represents the **money constraint**; that is, the amount she wants to earn.

c) Write an inequality that represents the **hours constraint**; that is, the number of hours she wants to work.

d) Determine the intercepts for the money constraint.

e) Determine the intercepts for the hours constraint.

f) Label the graph, showing number of hours mowing versus the number of hours babysitting.

g) Graph both lines.

h) Test a point in both inequalities to determine where to shade the feasible region to show the possible number of hours that satisfy the constraints.

i) List at least two combinations of hours that Patty could work at each job.

