

Show all work as you complete these problems individually. Use your notebooks as a resource.

Write an equation for each of the following lines.

1. Contains  $(3, -4)$  and  $(5, 6)$
2. Contains  $(2, -5)$  and  $(4, -5)$
3. Contains  $(1, 6)$  and  $(1, 4)$ .
4. Contains  $(3, -5)$  and is perpendicular to  $2x - 5y = 15$

Solve the following systems of equations by the method stated.

5. Substitution.  $-2x + 3y = 11$ ;  $2x + y = 9$
6. Elimination.  $4x + 3y = -1$ ;  $5x + 4y = 1$

Let  $U = \{x \mid x \in \mathbb{Z}, -5 \leq x < 7\}$        $A = \{x \mid x \in \mathbb{Z}, -5 \leq x < 0\}$        $B = \{x \mid x \in \mathbb{Z}, -2 < x \leq 5\}$

Find: 7.  $A \cup B$       8.  $A'$       9.  $A' \cap B$       10.  $(A \cap B)'$

Given:  $f(x) = -\frac{3}{5}x - 2$

$g(x) = -x + 2$

$h(x) = 2x^2 - 3x - 2$

Algebraically find the following. State as ordered pairs.

11.  $f(-5)$

12.  $h(3)$

13. the  $x$ -intercept on the graph of  $f$ .

14. when  $g(x) = h(x)$

15. when  $f(x) = h(x)$

16.  $x$  when  $f(x) = 3$

Graph each of the functions and verify your results from above.



