

Math 46 Practice Test 3

1. Does this equation describe a function?

$$2x - 3y = 6$$

2. If  $f(x) = -x^2 + 2x + 7$ , find:

a.  $f(2)$

b.  $f(-1)$

3. Solve, graph and write the solution in interval notation:

a.  $0 < \frac{5-2x}{3} \leq 5$

b.  $5 - x > 7$  or  $2x + 3 \geq 13$

4. Solve:

a.  $|4x - 3| + 5 = 6$

b.  $|2x - 4| = 0$

c.  $|y - 7| = |2y + 11|$

5. Solve and graph:

a.  $|5x - 3| \leq 18$

b.  $|2x - 3| > 0$

6. Graph  $y < \frac{2}{3}x - 3$

7. Graph the system:

$$2x + y \geq 0$$

$$5x - 3y \leq 12$$

8. Solve by graphing:  $y = x + 1$   
 $y = 2x - 1$

9. Solve using substitution:  $6x - 3y = 5$   
 $x + 2y = 0$

10. Solve using elimination:  $2x - 5y = 4$   
 $3x - 2y = 4$

11. Simplify:

$$(-3x^2y^6)^3$$

12. Perform the indicated operations:

a.  $(4x^2 - 3x + 5) - (-x^2 + 4x + 7)$

b.  $-2xy^2(5x^2y - 3xy^3 - 4)$

c.  $(4x^2 + 2x - 3)(2x^2 - 7x - 2)$

d.  $(2x^2 - 3y)(3x^2 + 4y)$