Math 0090 Lab Worksheet #16

Objective: Solve problems #1 - #10 involving absolute value and systems of nonlinear equations. Problems #11 through #15 are review problems.

1. Find the solution set of $|3x-2| = 5$

   A. $\left\{-\frac{7}{3}, 1\right\}$

   B. $\left\{-1, \frac{7}{3}\right\}$

   C. $\{1,1\}$

   D. $\left\{1, \frac{7}{3}\right\}$

2. Find the solution set of $|5-2x| = 5$

   A. $\{-10,0\}$

   B. $\{0,5\}$

   C. $\{0,1\}$

   D. $\{0,5\}$

3. Find the solution set of $|5+2x| = -5$

   A. $\{-10,0\}$

   B. $\{-5,0\}$

   C. $\{0,1\}$

   D. No solution

4. Find the solution set of $|4x-2| = 7$

   A. $\left\{-\frac{9}{4}, -\frac{5}{4}\right\}$

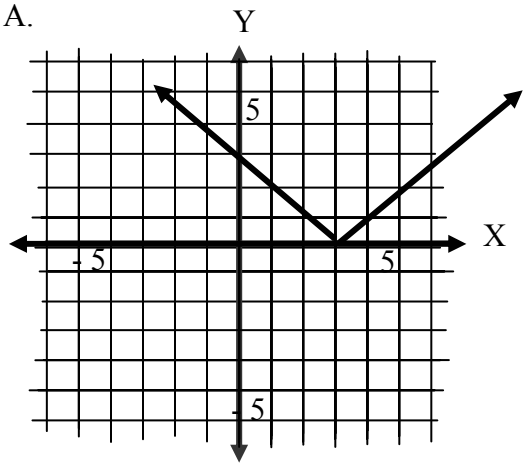
   B. $\left\{-\frac{5}{4}, \frac{9}{4}\right\}$

   C. $\left\{\frac{5}{4}, \frac{9}{4}\right\}$

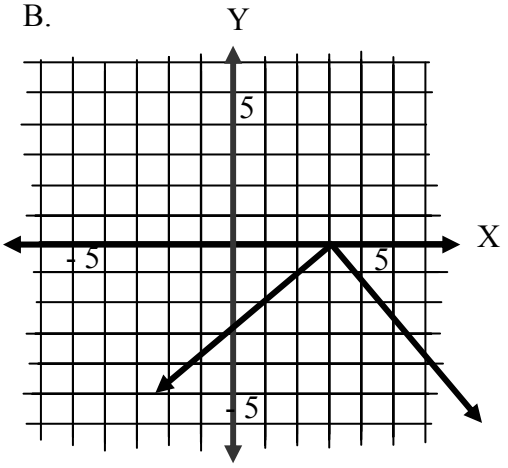
   D. $\left\{\frac{5}{2}, \frac{9}{2}\right\}$

5. Which graph below best represents the solution set for f(x)= $|x-3|$

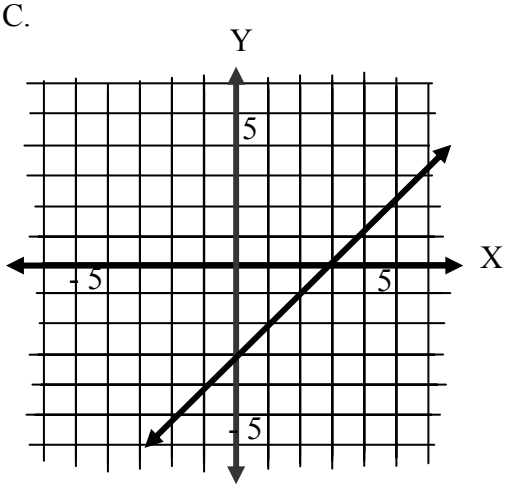
A.



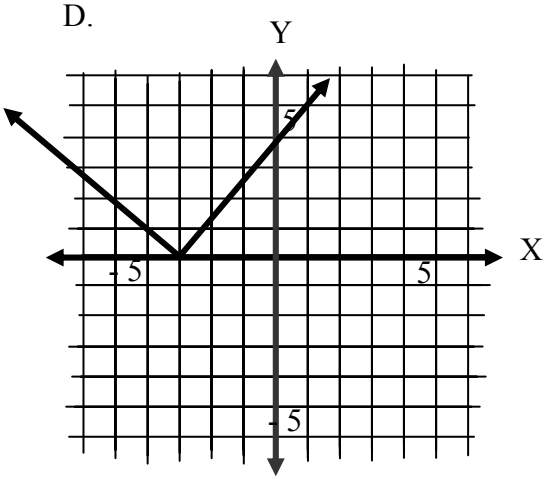
B.



C.



D.



6. Solve this system for x. $y = x^2 - 4x - 5$

$2x - 3y = 10$

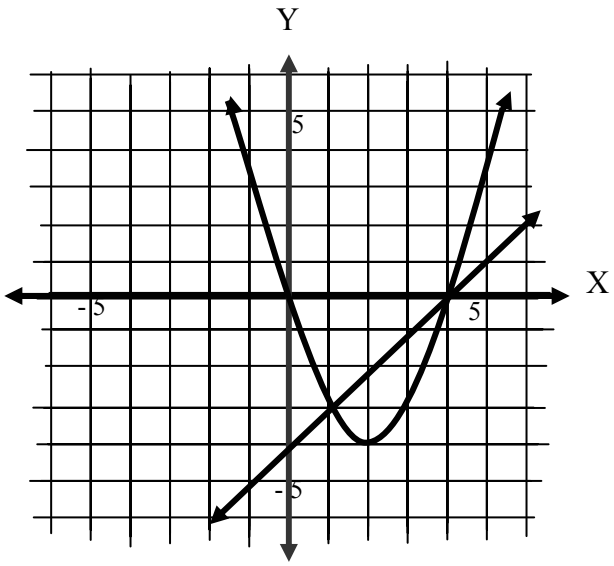
A. $\left\{-5, \frac{1}{3}\right\}$

B. $\left\{-\frac{1}{3}, 5\right\}$

C. $\left\{-\frac{1}{5}, 3\right\}$

D. No solution

7. Use the graph below to answer the question that follows.



Which of the following systems best represents the above graph?

A. $y = -x^2 - 4x$ and $x - y = -4$

B. $y = x^2 + 4x$ and $x + y = -4$

C. $y = x^2 - 4x$ and $x - y = 4$

D. $y = x^2 - 4x$ and $x + y = 4$

8. Find the solution of the system of equations. $y = x^2 - 2$
$4x + 3y = 9$

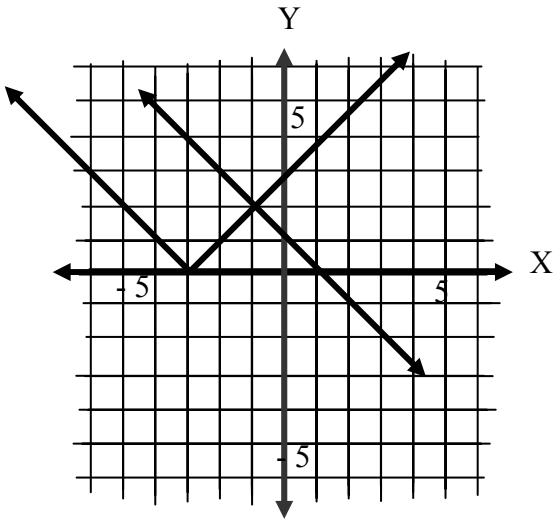
A. $(-3,7), \left(\frac{5}{3}, \frac{7}{9}\right)$

B. $(0,3), \left(-\frac{25}{6}, \frac{77}{9}\right)$

C. $(3\sqrt{3}, 3 - 4\sqrt{3}), (-3\sqrt{3}, 3 + 4\sqrt{3})$

D. No solution

9. Use the graph below to answer the question that follows.



Which of the following systems best represents the above graph?

A. $y = |x - 3|$ and $y = -x - 1$

B. $y = |x - 3|$ and $y = -x + 1$

C. $y = |x + 3|$ and $y = -x + 1$

C. $y = |x + 3|$ and $y = x + 1$

10. Find the solution set of $y = x^2 - 2x - 5$
and $x^2 - y - 2x = 0$

A. (0,5)

B. (5,0)

C. There are an infinite number of solutions

D. There is no solution

11. Solve. $x^2 - 6x - 9 = 0$

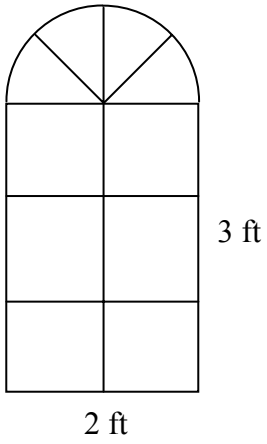
A. 3

B. $-3 \pm 3\sqrt{2}$

C. $3 \pm 6\sqrt{2}$

D. $3 \pm 3\sqrt{2}$

12. Use the diagram below to answer the question that follows.



A window frame consists of a rectangle with a semicircle on top as shown. What is the approximate total area of the stained glass needed for the window?

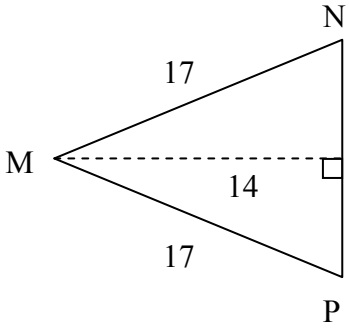
A. $9.14\ \text{ft}^2$

B. $11.14\ \text{ft}^2$

C. $12.28\ \text{ft}^2$

D. $7.57\ \text{ft}^2$

13. Use the diagram below to answer the question that follows.



Which of the following expressions describes the area of the triangle MNP?

A. $14\sqrt{17^2 - 14^2}$

B. $28\sqrt{17^2 - 14^2}$

C. $14(17)(14)$

D. $\dfrac{(17)(4)}{2}$

14. Perform the indicated operation. $\dfrac{x^2-2x-3}{x^2+x-12} \div \dfrac{x+1}{x+4}$

A. 0

B. 1

C. $\dfrac{(x-1)}{(x+1)}\dfrac{(x+4)}{(x-4)}$

D. $\dfrac{(x-3)}{(x+3)}\dfrac{(x+4)}{(x-4)}$

15. Find the product. $(x-4y)^2$

A. x^2-16y^2

B. $x^2-8xy+16y^2$

C. x^2+16y^2

D. $x^2+8xy+16y^2$