

Northwest-Shoals Community College  
Math, Science, and Technology Division  
MTH 100  
Practice Problems Chapter 3 and 4

1. Complete the table for the equation  $x - y = 8$

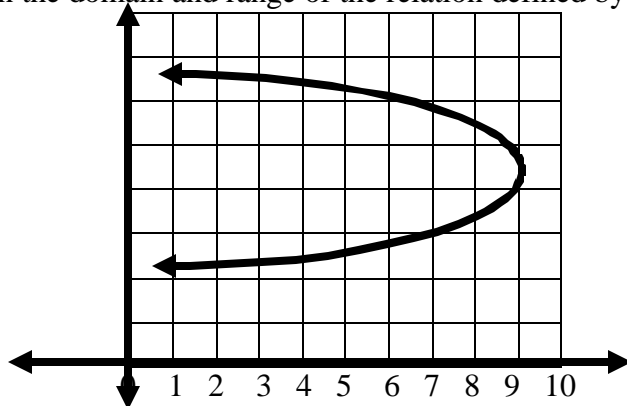
x	y

2. Find all of the intercepts for the equation  $5x + 7y = 28$   
x-intercepts:  
y-intercepts:
3. Indicate the quadrant in which the point  $(-8, 27)$  would lie.
4. Find the slope of a line that goes through the points  $(-3, 9)$  and  $(0, 15)$ .
5. Find the slope of the line given by the equation:  $5y = 10x - 25$ .
6. Find the slope of a line going through  $(-4, 6)$  and perpendicular to the line given by the equation  $y = -3x + 8$ .
7. Compare and contrast a line having zero slope with a line having an undefined slope. (This should be well explained.)
8. If a walkway increases 2 ft vertically for every 10 ft on the horizontal, write a fraction to express the slope of the walkway.
9. Write an equation for a line with a slope of 7 and containing the point  $(0, -3)$ .
10. Write an equation to give the line going through  $(3, -2)$  that is parallel to the line given by  $y = -6x + 4$ .
11. Graph the line given by  $y = -4$
12. Graph the line given by  $x = 5$
13. Graph a line with the slope of  $-3$  and going through the point  $(-2, -4)$ .

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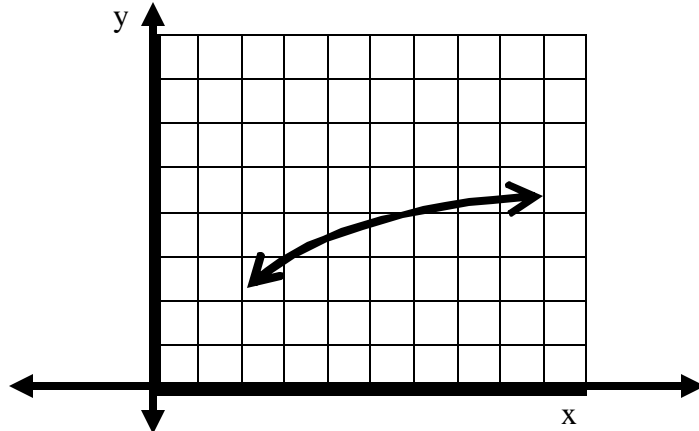
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14. Graph the line given by  $7y - 14 = 28x$
15. Graph the line that is perpendicular to  $y = -5x$  which goes through the point  $(5, 10)$ .
16. Graph the solution set to this inequality:  $3x - 2y \leq 12$ .
17. Given the domain and range of the relation defined by the graph



18. Determine if the equation defines  $y$  as a function of  $x$  algebraically:  
 $y^2 = x$

19. Determine if the equation defines  $y$  as a function of  $x$  graphically:



20. Determine if the ordered pair  $(5, 2)$  is a solution of the following system:  
$$\begin{cases} 2x - y = 8 \\ 3x + 2y = 20 \end{cases}$$

21. Solve this system by the substitution method:

$$\begin{cases} -x - 4y = -14 \\ 2x - y = 1 \end{cases}$$

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22. Solve this system by the elimination method: 
$$\begin{cases} 5x - 5y = 3 \\ x - y = 12 \end{cases}$$

**For each application problem below show variable labels, system of equations, and solutions:**

23. Jack Nicklaus has the most victories ever won by a golfer in the Masters' Tournament. He exceeds the number of Arnold Palmer's victories by 2 wins. If they have won a total of 10 tournaments, how many times has each won?
24. Sharon and Rae are riding bicycles on the same trail and in the same direction. Sharon crosses a bridge at 12:18 pm. Rae crosses the same bridge at 12:33 pm. If Sharon is going 8 mph and Rae is going 10 mph, when will Rae catch up with Sharon?
25. Tickets for Madonna's *Drowned World Tour* at the MGM Grand cost \$350 (lower) and \$250 (upper.) Ulie won big at the slot machines and purchased 10 tickets for his friends, costing a total of \$3300. How many of each type of ticket did he purchase?

Exam 2 will be somewhat similar to this "Practice Test".

You may get extra practice using the Chapter Reviews for the sections covered in class. The website [www.LialAlgebra.com](http://www.LialAlgebra.com) will give you tutorials and reviews, also.