

Version 4 — Practice

Directions: You must show all work except on multiple choice questions.

I. **MULTIPLE CHOICE** Circle to most correct response. (2 points each)

1. Which of the following is an example of an integer which is not a natural number?
  - a.  $\frac{15}{3}$
  - b.  $\sqrt{4}$
  - c. 1
  - d. 0
  - e. none of these
  
2. Which of the following is an example of a real number which is a rational number?
  - a. 3.14
  - b.  $\sqrt{25}$
  - c.  $\frac{22}{7}$
  - d.  $-2$
  - e. all of these
  
3. Name the property which justifies the following:  $2(3 + 4) = (3 + 4)2$ 
  - a. Associative property of multiplication
  - b. Associative property of addition
  - c. Distributive property
  - d. Commutative property of multiplication
  - e. none of these
  
4. Name the property which justifies the following:  $x(yz) = (xy)z$ 
  - a. Associative property of multiplication
  - b. Associative property of addition
  - c. Commutative property of multiplication
  - d. Commutative property of addition
  - e. none of these
  
5. Give the slope of the line:  $2y - 4 = 0$ 
  - a. 2
  - b.  $-2$
  - c. 4
  - d. Undefined
  - e. 0
  
6. Solve for  $x$ :  $2x - (7 - 4x) = 6x - 6$ 
  - a.  $-4 = -4$
  - b. All real numbers
  - c. no solution
  - d. 0
  - e. none of these

**II. SHOW ALL WORK ON EACH OF THE FOLLOWING PROBLEMS****In problems 7 – 9 perform the indicated operations.**

7. Evaluate:  $4ps - r^2$  for  $r = -3$ ,  $p = -2$ ,  $s = -1$  (3 pts)

8.  $-5 - (3 - 3 \cdot 4 \div 2) - 5 \cdot |-1|$  (3 pts)

9.  $\frac{-2 - 2}{3 - 6} - \frac{1}{3} \div \left(\frac{1}{3} - \frac{1}{4}\right)$  (4 pts)

Solve each of the following equations or inequalities: (3 pts each)

10.  $\frac{2}{5}x - \frac{1}{3} = \frac{2}{3}x + \frac{1}{4}$

11.  $2(x - 3) + 7x - 4 = 10x - 10$

12.  $-3(x - 3) - (2x - 2) = (x - 4) - (3x + 1)$

13.  $\frac{x + 3}{8} - \frac{2x - 1}{20} = 3$

14. If  $y = n(a - x)$  solve for  $x$ .

15.  $-7x + 2(x - 3) \leq 6 - 10x$   
Give solution as an inequality  
and as a graph.

←-----→



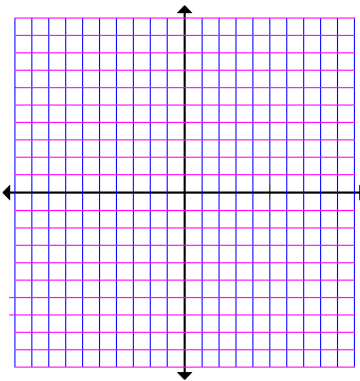
18. The measure of the second angle of a triangle is twice as large as the measure of the first. The measure of the third angle is  $30^\circ$  less than the sum of the measures of the other two angles. Find the measure of each angle.
19. Thirty gallons of a 20% acid solution is needed for an experiment. Only 40% and 10% acid solutions are available. How much of each should be mixed to form the needed solution?

Find the slope of each of the following lines (20 - 22): (2 pts each)

20. The line having equation  $4x - 3y = 2$

21. The line  $6 + 3x = 0$

22. The line having the graph shown:



23. Without graphing, determine whether the graphs of the following two equations are parallel, perpendicular or neither. Show work.

$$3x + 2y + 6 = 0$$

$$-8x = 12y + 24$$

(3 pts)

Find the slope-intercept form of the equation of each line in problems 24 - 28:

24. The line passing through the points  $(1, -4)$  and  $(-2, -3)$ . (4 pts)

25. The line having slope  $-\frac{3}{4}$  and passing through the point  $(2, -1)$ . (4 pts)

26. The line having an  $x$  - intercept of 4 and a  $y$  - intercept of  $-3$  (4 pts)

27. The line passing through the point  $(4, -1)$  perpendicular to the line having equation  $x - 2y = 5$ . (4 pts)

28. The line parallel to the  $y$  - axis passing through the point  $(-3, 5)$ . (2 pts)

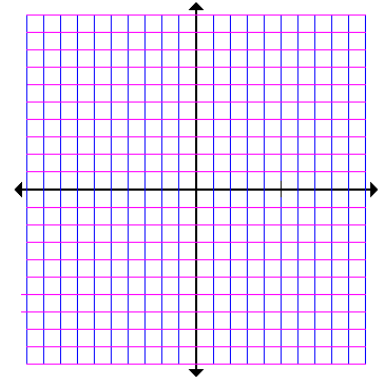
29. Find the  $x$  and  $y$ -intercepts for the graph of the equation  $4x - y = 3$  then graph all of the solutions to the equation. (4 pts)

$x$ -intercept (write as an ordered pair):

\_\_\_\_\_

$y$ -intercept (write as an ordered pair):

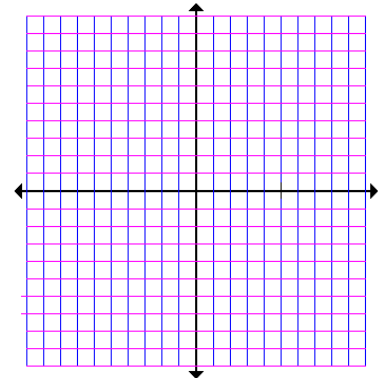
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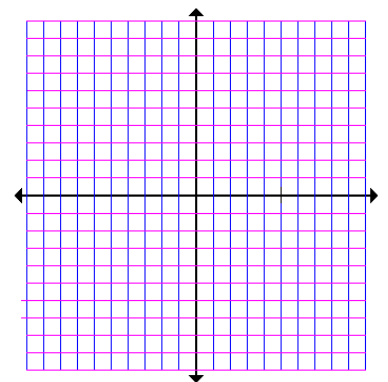
30. Find the slope and  $y$ -intercept of the line having equation  $4x - 3y = 6$  and use the slope and  $y$ -intercept to graph the solutions to the equation. (4 pts)

Slope: \_\_\_\_\_

$y$ -intercept: \_\_\_\_\_



31. Sketch the graph of all solutions to the equation  $-2x - 8 = 0$ . (2 pts)



**Math 94 Midterm**

32. Graph the inequality:  $4x - 5y \leq -20$

(3 pts)

