MATH 100 Name: _____

Worksheet: _____ Date: _____

ANSWER SHEET

Instructions: Place your answers to all problems on this sheet. Attach your work for the problems on the back. If answer doesn't fit on the answer sheet and is on your solution paper, indicate that in the answer slot below by writing "on solution paper".

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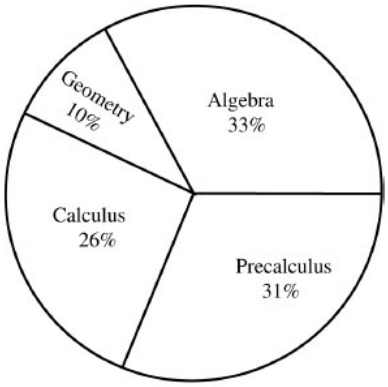
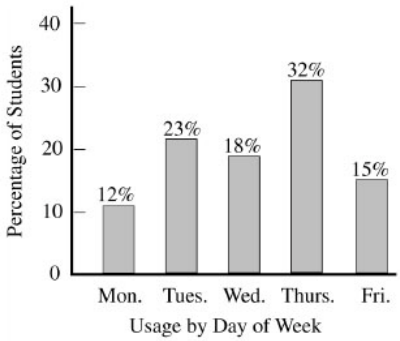
Solve the problems on a separate sheet of paper. Also, write your answers on the answer sheet. You will get credit for **20 correct answers**.

Section 3.1 – Reading Graphs; Linear Equations in Two Variables



Usage by Subject



Usage by Day of Week

1. On which day was the center used one-and-a-half times as much as Monday?

2. If 4500 students used the math center during the school year, how many of these students were not enrolled in geometry or pre-calculus courses? Assume each student is enrolled in only one math class.

3. Which day had the greatest decrease in usage of the center as compared to the previous day?

Write each solution as an ordered pair

4. $x = 4$ and $y = 7$

5. $y = \frac{1}{3}$ and $x = 0$

Decide whether the given ordered pair is a solution of the given equation

6. $2x - 3y = 1$
   $\left(0, \frac{1}{3}\right)$

7. $5x - 2y = 6$
   $(2, -2)$

For the given equation, complete the ordered pairs beneath it.

8. $5x + 4y = 10$
   a) $(2, \quad)$
   b) $(4, \quad)$
   c) $(0, \quad)$
   d) $(\quad, 0)$

Plot the ordered pairs on a coordinate system.

9. $(7, 1),\ (0, -4), (-2, -7), (5, 0)$

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Section 3.2 Graphing Linear Equation

Complete the ordered pairs for each equation. Then graph the equation by plotting the points and drawing a line through them.

10. $x + y = 3$
    $(0, \quad), (\quad, 0), (2, \quad)$

11. $2y - 4 = x$
    $(0, \quad), (\quad, 0), (-1, \quad)$

Find the intercepts for the graph of each equation

12. $3x + 2y = 12$

13. $5x - 2y = 10$

Graph each equation

14. $3x + y = 6$
15. $4x - y = 4$
16. $x = 3$
17. $y + 3 = 0$

Simplify each expression.

18. The enrollment at Lincolnwood High School decreased during the years 1990 to 1995. If $x = 0$ represents 1990, $x = 1$ represents 1991, and so on. The number of students enrolled in the school can be approximated by the equation

$$y = -85x + 2435$$

Use this equation to approximate the number of students in the years 1990, 1992 and 1994.

Section 3.3 – The Slope of a Line

Find the slope of each line.

19. Through $(4, 3)$ and $(3, 5)$

20. Through $(-3, 2)$ and $(7, 4)$

21. $y = \frac{1}{2}x + 5$
22. $4y = 3x + 7$
23. $y = -4$
24. $x = 3$

In each pair of equations, give the slope of each line and then determine whether the two lines are parallel, perpendicular, or neither.

25. $y = -5x - 2$
    $y = 5x + 11$

26. $2x + 2y = 7$
    $2x - 2y = 5$

27. $y + 4 = 0$
    $y - 7 = 0$

28. $y = 9$
    $x = 0$

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Section 3.4 – Equations of a Line

Write an equation in slope-intercept form for each of the following lines.

29. $m = -2;\ \ b = 0$

30. Slope $-\frac{1}{2}$; y-intercept $(0, -3)$

Graph the line using its y-intercept and slope.

31. $(-3, -2);\ \ m = \frac{2}{3}$

32. $(2, 4);\ \ undefined\ slope$

33. $(-2, -2);\ \ m = 0$

Write an equation for the line passing through the given point and having the given slop. Write equations in the standard form $Ax + By = C$.

34. $(-4, -7);\ \ m = \frac{3}{4}$

35. $(-2, 4);\ \ m = 2$

Write an equation for the line passing through each pair of points. Write the equations in standard form $Ax + By = C$.

36. $(2, 3)$ and $(7, 5)$

37. $(7, 2)$ and $(-2, -4)$

Section 3.5 – Graphing Linear Inequalities in Two Variables

Graph each linear inequality

38. $y \leq -\frac{2}{3}x + 2$

39. $x < 2y + 4$

40. $y \geq \frac{1}{3}x$

41. $x > -2y$

Section 3.6 – Introduction to Functions

Identify the domain and range of each relation.

42. $\{(1, 4), (2, 4), (3, 4), (4, 4)\}$

43. $\{(6, 8), (7, 9), (8, 10)\}$

Decide whether the equation or inequality defines y as a function of x.

44. $y = 3 - x^2$

45. $y = -\frac{2}{3x-1}$

For the function, f, find $f(2)$ and $f(-1)$

46. $f(x) = 8 - 5x$

47. $f(x) = -x^2 + 8x - 2$

48. $f(x) = |x - 5|$