Math 082 Final Exam Review Packet **Name:_____**

1. Evaluate the expression: $\frac{28}{c}-\frac{35}{x}-y$, when $c=-4$, $x=7$, and $y=11$

2. Evaluate the expression: $\frac{x}{12}-\frac{y}{5}+z$, when $x=-6$, $y=-35$, and $z=\frac{1}{2}$

3. Evaluate the expression: $(-b-2a)^2-3c$ when $a=-5$, $b=13$, and $c=-7$

4. Evaluate the expression: $(b+3a)^2-3c^2$ when $a=5$, $b=-7$, and $c=-1$

5. Simplify the expression: $5(8-10)^3-[12\div(3)(2)]^2$

6. Simplify the expression: $-2(7-9)^3-[8\div 4\bullet 2]^2$

7. Simplify the following expression: $12^2-[21+6\div 3]$

8. Solve: 3x – 5 = 2x + 7

9. Solve: 5x + 3 = 6 – 2x

10. Solve: $\frac{3}{5}x=-\frac{4}{7}+x$

11. Solve: $\frac{6}{5}y+3=\frac{3}{10}-\frac{1}{5}y$

12. Solve: $12-7y=17y-5(3-4y)$

13. Solve: $4-5y=7y-2(3-y)$

14. Solve for x: $y=mx+b$

15. Solve for T: $PV=nRT$

16. Solve for s: $N=r(A-s)$

17. The difference of 9 and 5 times a number is 14. Find the number.

18. A number increased by 12 is four times the number. Find the number.

19. The sum of 4 and twice a number is 56. Find the number.

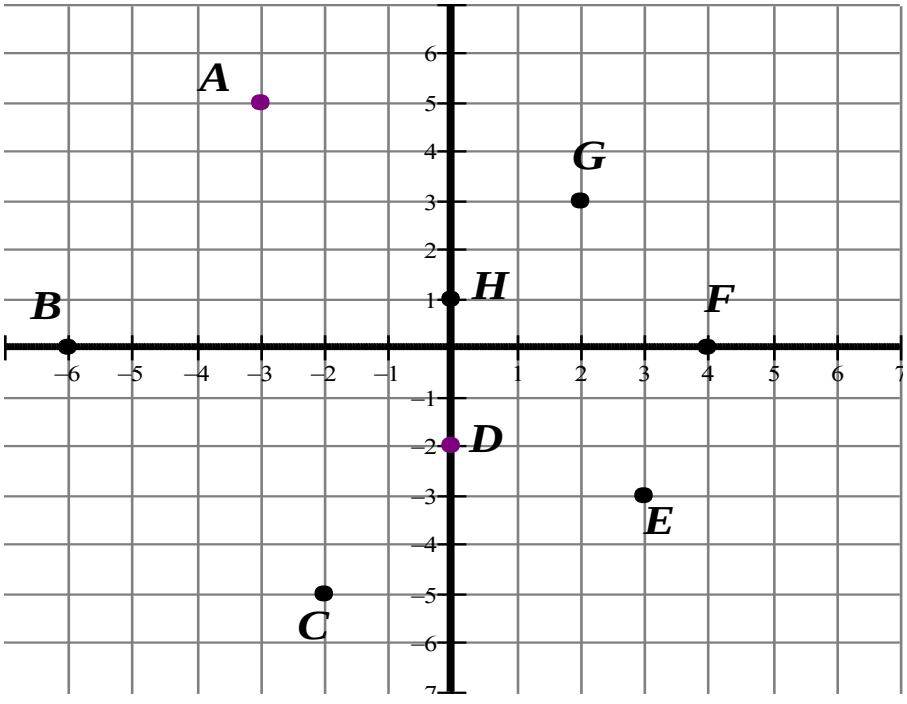
20. For the inequality,: $-3 < 3x - 4 \leq 11$
    a. Solve the inequality
    b. Graph the solution
21. For the inequality: $3x - 7 < 11 + 9x$
    a. Solve the inequality
    b. Graph the solution
22. For the inequality: $23x - 27 > 5(4x - 6)$.
    a. Solve the inequality
    b. Graph the solution
23. Solve the inequality: $-17r + 11 \geq -5(3r - 2)$

24. Is $(-2, 3)$ a solution of the equation $x - 3y = -7$? Justify your answer.

25. Is $(2, -3)$ a solution of the equation $x - 3y = 11$? Justify your answer.

26. Is $(1, -5)$ a solution of the equation $5x - 3y = -10$? Justify your answer.

27. Write the ordered pair (x, y) for each of the points labeled on the graph.



A =

B =

C =

D =

E=

F=

G=

H=

28. Write the equation of the line that passes through the points $(4, 6)$ and $(0, 3)$. Write your answer in slope-intercept form.

29. Write the equation of the line that passes through the points $(-9, -2)$ and $(3, 4)$. Write your answer in slope-intercept form.

30. Write the equation of the line that passes through the points $(11, 7)$ and $(-3, -14)$. Write your answer in slope-intercept form.

31. Graph the line: $y = \frac{2}{5}x + 7$

32. Graph the line: $y = \frac{-4}{3}x + 2$

33. Graph the line: $y = \frac{3}{5}x - 4$

34. For the line $2x - 10y = -5$, find:
    a. The y-intercept
    b. The x-intercept

35. For the line $3x + 2y = -6$, find:
    a. The y-intercept
    b. The x-intercept

36. For the line $-12x + 8y = -6$, find:
    a. The y-intercept
    b. The x-intercept

37. Graph the linear equation: $2x - y = -6$

38. Graph the linear equation: $7x + 5y = 35$

39. Graph the linear equation: $3x - 7y = 42$

40. Find the slope of the line $-11x = -5y - 13$

41. Find the slope of the line $y = -3$

42. Find the slope of the line $8x + 5y = -11$

43. Find the slope of the line $8y - 5x = -11$

44. Solve the following system of equations by graphing: $\begin{aligned} 2x - y &= 1 \\ x + 2y &= 8 \end{aligned}$

45. Solve the following system of equations by graphing: $\begin{aligned} -5x - y &= 7 \\ x + 2y &= 4 \end{aligned}$

46. Solve the following system of equations by graphing: $\begin{aligned} 5x + 3y &= 3 \\ -x - 3y &= 9 \end{aligned}$

47. Solve the following system of equations: $\begin{aligned} -2x + y &= -1 \\ -x - 2y &= -8 \end{aligned}$

48. Solve the following system of equations: $\begin{aligned} -5x - y &= 7 \\ 0.5x + y &= 2 \end{aligned}$

49. Solve the following system of equations: $\begin{aligned} -5x - 3y &= -3 \\ x + 3y &= -9 \end{aligned}$

50. Solve the following system of equations: $\begin{aligned} y &= 3x \\ 2x - 3y &= 7 \end{aligned}$

51. Solve the following system of equations: $\begin{aligned} x &= y + 3 \\ y - 2x &= -5 \end{aligned}$

52. Solve the following system of equations: $\begin{aligned} 3x - 5y &= 4 \\ 7x + 11y &= -2 \end{aligned}$

53. Adult tickets for a play cost $5.50 and children tickets cost $2.00. For one performance, 398 tickets were sold. Receipts for the performance were $1426.00. Find the number of children tickets sold.

54. Two investments earn an annual income of $86. One investment earns an annual simple interest rate of 5%, and the other investment earns an annual simple interest rate of 6%. The total amount invested is $1500. How much is invested in each account?

55. Two burgers and one order of fries contain 34 grams of fat. Two orders of fries and one burger contain 41 grams of fat. Find the number of grams of fat in each item.

56. Simplify: $(3y^2 - 11y - 13) - (3y^2 - y - 1)$

57. Simplify: $-4(t^2 - 7t - 11) - 2(3t^2 - 7t - 5)$

58. Simplify: $3(x^2 - 7x - 2) - (x^2 + 7x + 13)$

59. Simplify: $(-3z^7)(-5z^3)$

60. Simplify: $(-2x^4)(3x^2)(-4x^5)$

61. Simplify: $(-2t)(-3t^7)(-4t^4)$

62. Simplify: $(2t - 5)(3t + 5)$

63. Simplify: $(3x - 1)(x + 3)$

64. Simplify: $(5x - 7)(2x + 3)$

65. Simplify, write answer with positive exponents: $(4x^3)^2$

66. Simplify, write answer with positive exponents: $(-3x^{-3}y^4)^3$

67. Simplify, write answer with positive exponents: $(-4x^5y^{-2})^4$

68. Simplify, write answer with positive exponents: $\dfrac{16x^{11}y^5}{-8x^8y^2}$

69. Simplify, write answer with positive exponents: $\dfrac{-60x^{13}y^4t^5}{15x^9y^3t}$

70. Simplify, write answer with positive exponents: $\dfrac{-15x^9y^3t}{60x^{13}y^4t^5}$

71. Simplify: $\dfrac{8y^{-3}}{4y^{-5}}$

72. Write:

    a. 4.05643×10^4 in decimal notation

    b. 787.507 in scientific notation.

    c. $(7 \times 10^{11})(8 \times 10^{-8})$ in scientific notation after simplifying.

    d. $\dfrac{8 \times 10^5}{2 \times 10^{-8}}$ in scientific notation after simplifying.

73. Factor out the GCF from the polynomial $8z^5 - 12z^7$

74. Factor out the GCF: $6x^2y^3 + 9x^3y$

75. Factor out the GCF: $28r^4s^2 + 7r^3s - 35r^4s^3$

76. Completely factor: $x^2 - 8x - 33$.

77. Completely factor: $x^2 + 7x - 18$.

78. Completely factor : $81 - 4x^2$.

79. Completely factor: $x^2 - 3x - 40$.

80. Completely factor : $a^2 + 2ab + b^2$.

81. Completely factor: $2x^3 - 6x^2 + 4x$.

82. Completely factor: $x^2 - 3xy - 4y^2$.

83. Solve the equation by factoring: $x^2 - 6x + 8 = 0$.

84. Solve the equation by factoring: $z^2 + z = 30$.

85. Solve the equation by factoring: $2x^2 - 10x - 12 = 0$.