Algebra 1 (cp) Midterm Review

Name: Date: Period:

Chapter 1

1. Evaluate the variable expression when $j = 4$.

$$\frac{j}{44}$$

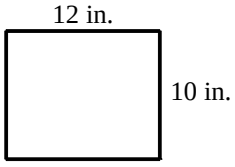
[1] _____

2. Evaluate the variable expression when $j = 4$.

$$\frac{24}{j}$$

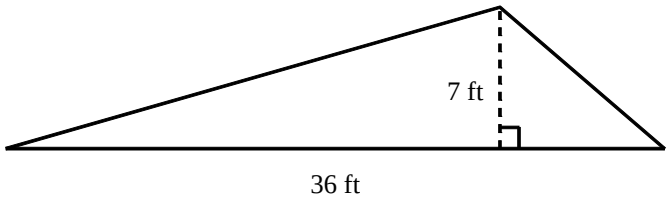
[2] _____

3. Find the perimeter of the rectangle. Then find the area.



[3] _____

4. Find the area of the triangle.



[4] _____

5. Write the expression in exponential form.
$2 \cdot 2 \cdot 2$

[5] _____

6. Complete the table.

Power	Base	Exponent	Evaluate
2^5			

[6]

Power	Base	Exponent	Evaluate
2^5			
	3	4	
			125
r^8			

7. Evaluate the expression for the given value of the variable.

x^3 when $x = 3$

[7] _____

8. Evaluate the expression for the given value of the variable.

$16 + 12x - x^3$ when $x = 3$

[8] _____

9. Evaluate the expression for the given values of the variables.

$(c)^3 + (2g)^2$ when $c = 2$ and $g = 3$

[9] _____

10. Evaluate the expression.

$6 \cdot 6 - 3$

[10] _____

11. Evaluate the expression.

$4 \cdot 3^2 - 5$

[11] _____

12. Evaluate the expression.
$8 + 8 \cdot 2 - 10 \div 2$

[12] _____

13. Evaluate the expression for the given value of the variable.
$3y^2 \div 3 + 7$ when $y = 2$

[13] _____

14. Evaluate the expression for the given value of the variable.
$(y + 3)^2 - 40 \div 8$ when $y = 4$

[14] _____

15. Evaluate the expression for the given value of the variable.
$[(y - 2)^2 + 5] \div 3$ when $y = 4$

[15] _____

16. Evaluate the expression for the given value of the variable.
$[(y + 3)^2 - 9] \div 8$ when $y = 4$

[16] _____

17. Evaluate the expression for the given values of the variables.

$\frac{45-1}{x+2y^2 \cdot 2}$ when $x = 6$ and $y = 2$

[17] _____

18. Determine whether the following is an expression, an equation, or an inequality.

$2x^2 - 6x - 1 = 3$

[18] _____

19. Check to see if $x = 4$ is or is not a solution for the equation.

$2x + 1 = 8 + x \div 4$

[19] _____

20. Check to see if $x = 7$ is or is not a solution of the inequality.

$5 + 2x \leq 15$

[20] _____

21. Check to see if $x = 2$ is or is not a solution of the inequality.

$7 + 3x \leq 7x - 2$

[21] _____

22. Check to see if $x = 2$ is or is not a solution of the inequality.
$5x - 2 \geq 7$

[22] _____

23. Does the input-output table represent a function? If it does represent a function, list the domain and range.

Input	2	3	4	5
Output	12	15	18	21

[23] _____

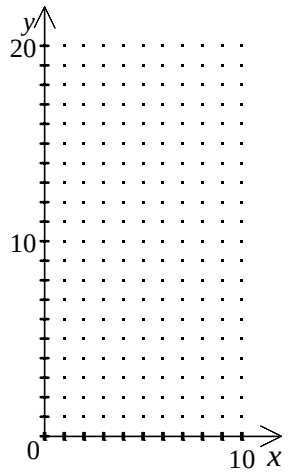
24. Does the input-output table represent a function? If it does represent a function, list the domain and range. If it does not represent a function, explain why.

Input	0	2	4	4	6
Output	1	4	7	10	13

[24] _____

25. Make a table of values for the line $y = 2x + 1$ using x-values of 1, 2, 3, 4, and 5. Graph the line.

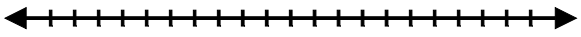
x	1	2	3	4	5
$f(x)$					



[25]

Chapter 2

26. Graph –2, 4, –6, and 1 on a number line and determine the order of the numbers.

[26] 

27. Write the numbers in increasing order.

$\frac{3}{2},\ -10,\ 0,\ \frac{2}{3},\ -\frac{5}{4},\ 1$

[27] _____

28. What is the opposite of 15?

[28] _____

29. Solve the equation.

$|x| = 8$

[29] _____

30. Use the properties of addition to find the sum.

(–7) + 6 + [–(2 – 3)]

[30] _____

31. Find the difference.
$(-8)-(-2)$

[31] _____

32. Find the terms of the expression.
$-3-4x$

[32] _____

33. Find the product.
$-3(-2)$

[33] _____

34. Find the product.
$(-2)^4$

[34] _____

35. Simplify the expression.
$-2(-5)(k)$

[35] _____

36. Determine whether the statement is *true* or *false*. If it is false, give a counterexample. The product $0 \cdot (n)$ is always 0.

[36] _____

37. Evaluate the expression for the given value of the variable.
- 4[X+5] - 10 * X / 2 + 30 when X= - 5

[37] _____

38. Use the Distributive Property to rewrite the expression without parentheses.
$17x(3x - 5)$

[38] _____

39. List the like terms in the expression.
$-11k - 3j^2 + 6j + 4j + 8j^2 + 7k$

[39] _____

40. Simplify the expression.
$8x + 6 + 4x - 4$

[40] _____

41. Simplify the expression.
$3x + 7 - 3x + 4$

[41] _____

42. Simplify the expression.
$7x + 4(x + 3)$

[42] _____

43. Simplify the expression.

$90 - 15(X+1) + 5(X+1)$

[43] _____

44. Find the quotient.
$40 \div (-5)$

[44] _____

45. Evaluate the expression for the given value(s) of the variable(s).
$\frac{v-12}{4}$ when $v = 20$

[45] _____

46. Evaluate the expression for the given value(s) of the variable(s).

$\frac{x}{y}$ when $x = 20$ and $y = -5$

[46] _____

47. Simplify the expression.

$\frac{42f - 24}{6}$

[47] _____

48. Simplify the expression.

$\frac{28x - 14}{7}$

[48] _____

Chapter 3

49. Solve the equation.

$\frac{5}{4}x = 40$

[49] _____

50. Solve the equation.

$\frac{x}{5} = 3$

[50] _____

51. Solve the equation.

$4x + 8 = 21$

[51] _____

52. Solve the equation.

$2x - |-5| = 23$

[52] _____

53. Solve the equation.

$2n + 18 - 4n = 34$

[53] _____

54. Solve the equation.

$5n - 2(n - 2) = -11$

[54] _____

55. Solve the equation.

$\frac{8}{18}y - 40 = 0$

[55] _____

56. Solve the equation.

$-\frac{21x}{7} - 5x = 24$

[56] _____

57. Solve the equation.

$6z + 3 = 8z - 5$

[57] _____

58. Solve the equation.
$5x + 14 - 2x = 9 - (4x + 2)$

[58] _____

59. Solve the equation.
$7z + 5 = 9z - 3$

[59] _____

60. Solve the equation.
$4 + 3(x - 1) = 2(x - 2)$

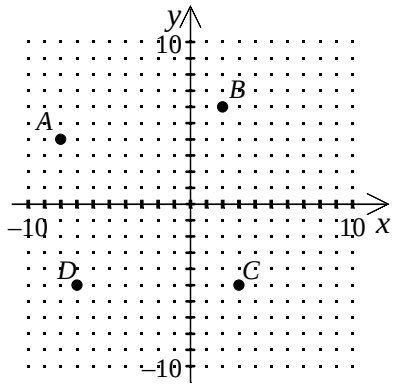
[60] _____

61. Solve the equation.
$\frac{1}{4}(4x + 16) = 3 + 2(2 - x)$

[61] _____

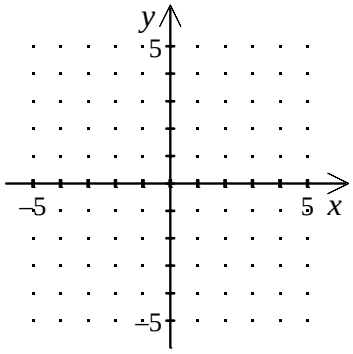
Chapter 4

62. Write the ordered pairs that correspond to the given points.



[62] _____

63. Plot the given points in a coordinate plane. State the location for each point
(4, 0), (–2, –3), (3, 1), and (–2, 2)



[63] _____

64. Rewrite the equation in function form.
$-4x + y = 16$

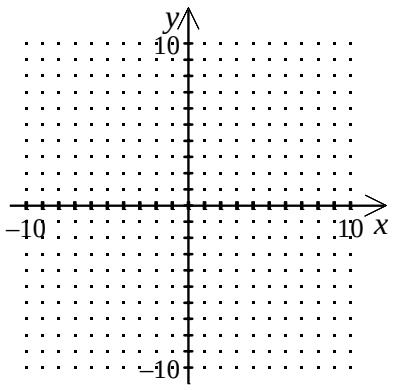
[64] _____

65. Find four solutions of $2x + y = 7$.

[65] _____

66. Complete the table. Then graph the equation.

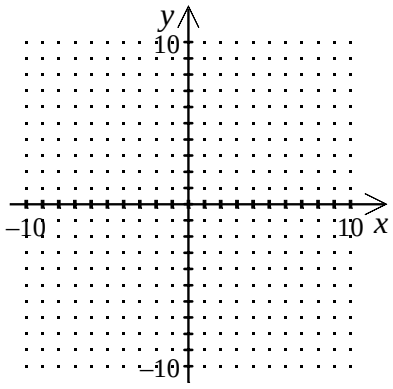
x	-4	-2	0	2	4
$y = \frac{1}{2}x - 4$					



[66] _____

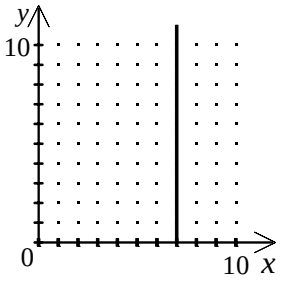
67. Graph the equation.

$x = -8$



[67] _____

68. Write the equation for this graph.



[68] _____

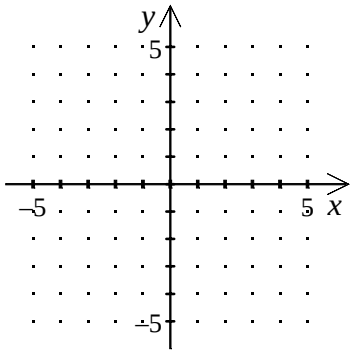
69. Write the equation of the horizontal line passing through the point (4, 7).

[69] _____

70. Write the equation for the vertical line passing through the point (–5, 2).

[70] _____

71. Sketch the graphs of $x = 2$ and $y = -4$. Find the point at which the two graphs intersect.



[71] _____

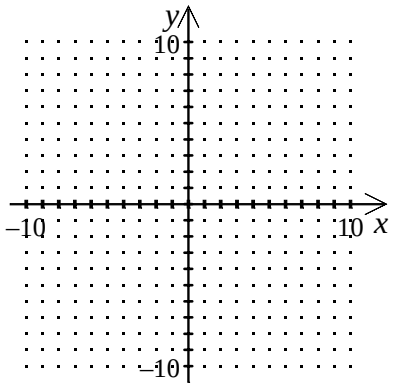
72. Find the x-intercept of the line $3x - y = -3$.

[72] _____

73. Find the x- and y-intercepts of the line $3x + 4y = -12$.

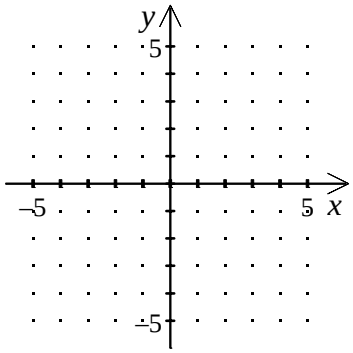
[73] _____

74. Graph the linear equation by finding the x- and y-intercepts.
$2x - y = -2$



[74] _____

75. Plot the points and find the slope of the line passing through the points (3, –5) and (5, 4).



[75] _____

76. Find the slope of the line passing through the points $A(-2, 9)$ and $B(1, -3)$.

[76] _____

77. Find the slope of the line that contains (–4, –3) and (–3, –3).

[77] _____

78. Find the slope of the line through the points (1, –3) and (–1, 7).

[78] _____

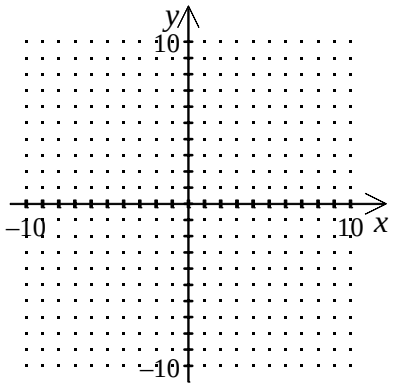
79. Find the slope of the line through the points (4, 7) and (–6, 2).

[79] _____

80. Give the slope of the line that contains $(6,\ 4)$ and $(6,\ 6)$.

[80] _____

81. Graph the equation $y = -\frac{3}{2}x$.



[81] _____

82. Rewrite the equation in slope-intercept form.
$8x - 3y - 5 = 0$

[82] _____

83. Find the slope and y-intercept of the line.
$6x - 3y = 54$

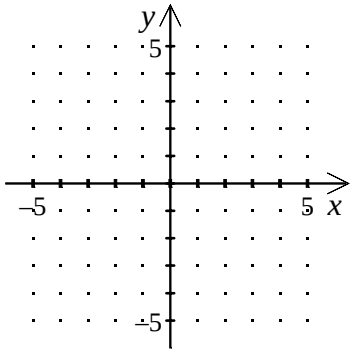
[83] _____

84. Solve for y.
$4x - 5y = 0$

[84] _____

85. Write in slope-intercept form and sketch the line.

$3x - y = 2$



[85] _____

Chapter 5

86. Solve for y in $6x+2y=3$. Determine if the line is parallel to $y=-\frac{7}{2}x-\frac{5}{8}$.

[86] _____

87. Find the slope and y-intercept of the line $y=5x+4$. Is the line parallel to $y=\frac{1}{5}x+4$?

[87] _____

88. Find the slope and y-intercept of the line $y=18x-1$. Is the line parallel to $y=18x-10$?

[88] _____

89. Is the relation $\{(-1,-3),(-1,2),(2,-4)\}$ a function?

[89] _____

90. Decide whether the information defines a function. If it does, state the domain of the function.

input	0	1	2	3	4
output	1	2	3	2	1

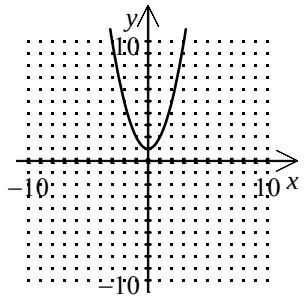
[90] _____

91. Find $f(-2)$ given $f(x) = 3x^2 + 2x + 10$. Then find f(0) and f(1).

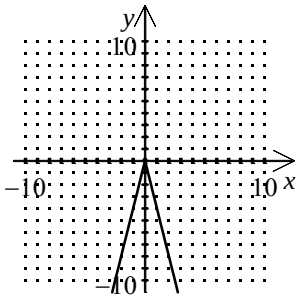
[91] _____

92. Determine which of the following graphs does *not* represent a function.

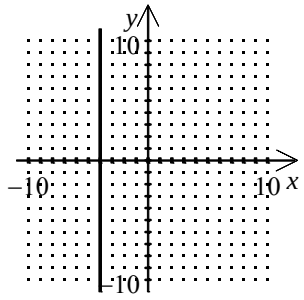
[A]



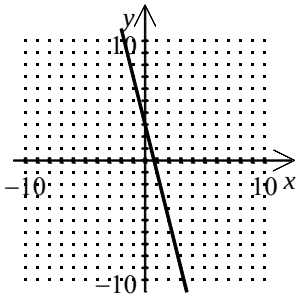
[B]



[C]

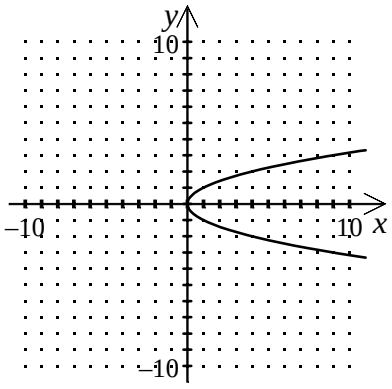


[D]



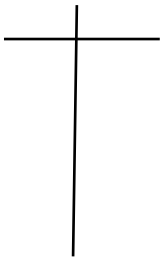
[92] _____

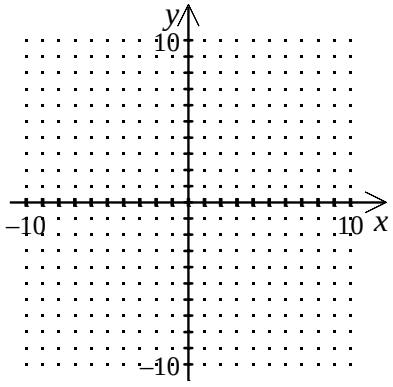
93. Determine whether the following graph represents a function.



[93] _____

94. Complete the function table. Then graph the function.
f(x) = 1/2X - 4 with the domain -4, 0, and 4. Then state the range.





[94] _____

95. Write in slope-intercept form the equation of a line having slope –7 and *y*-intercept 7.

[95] _____

96. Write an equation of the line with slope $-\frac{3}{2}$ and *y*-intercept –5.

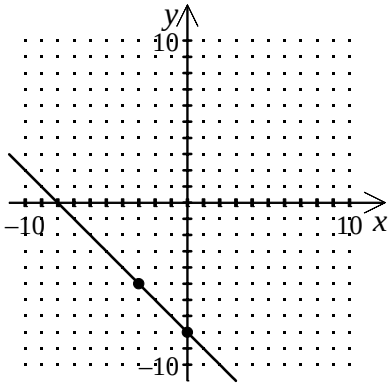
[96] _____

97. Write in slope-intercept form the equation of the line.

$m = \frac{2}{3}$, $b = 4$

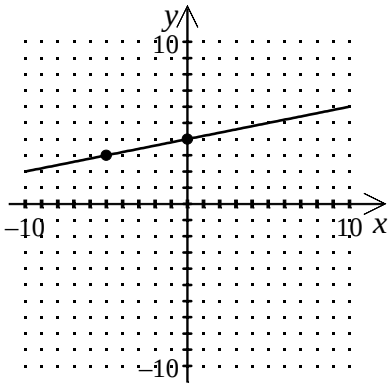
[97] _____

98. Write an equation of the line shown in slope-intercept form.



[98] _____

99. Write an equation of the line shown in slope-intercept form.



[99] _____

100. Write an equation in point-slope form of the line. Then rewrite the equation in slope-intercept form.

The line that passes through the point (–2, 3) and has the slope $\frac{2}{3}$.

[100] _____

101. Use the point-slope form to write an equation of the line that passes through the given point and has the given slope.

(–7, 1), $m = \frac{1}{2}$

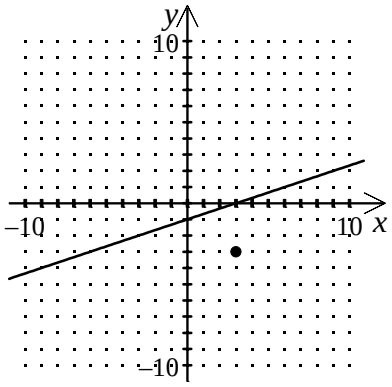
[101] _____

102. Use the point-slope form to write an equation of the line that passes through the given point and has the given slope.

$(5, -7)$, $m = \frac{3}{5}$

[102] _____

103. Write in slope-intercept form the equation of the line that is parallel to the line in the graph and passes through the given point.



[103] _____

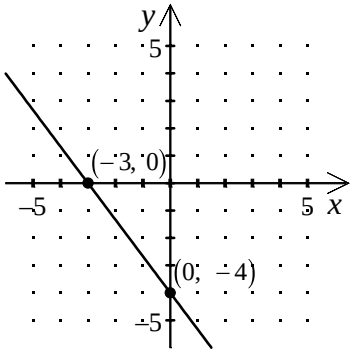
104. Write an equation for the line containing $(-5, -18)$ and $(-6, -23)$.

[104] _____

105. Write in point-slope form the equation of the line that passes through the points (4, –4) and (3, 1). Use (4, –4) as the point (x_1, y_1).

[105] _____

106. Write an equation of the line shown on the graph.



[106] _____

107. Write the equation of the line in slope-intercept form that passes through the given points. (–3, 5) and (2, –5)

[107] _____

108. Write the equation of the line in standard form. Use integer coefficients.

$y = -\frac{4}{7}x - \frac{2}{7}$

[108] _____

109. Write the equation of the line in standard form. Use integer coefficients.

$y = \frac{2}{3}x - 4$

[109] _____

110. Determine whether the lines are perpendicular.

$y = 4x + 3,\ y = -4x - \frac{1}{3}$

[110] _____

111. Determine whether the lines are perpendicular.

y=1/2 x - 7 , $y = -2x + 10$

[111] _____

112. Find the slope of a line perpendicular to the line $y = -4x + 3$.

[112] _____