Algebra II Final Exam Review 2018

The following problems will be graded as part of your exam score. They are due on your exam date, however, we will go over questions in class a few days before the exam. SHOW ALL WORK!!!

Convert each:

1. 18 yards to feet
2. 60 mph to feet per second
3. 2000 square inches to square feet

Simplify each.

4. $15-3*8\div 2$
5. $(15-3)*8\div 2$
6. $15-3*(8\div 2)^2$
7. $15-3(8-2)$
8. $15-3(8-2)^2$

Solve each equation or inequality.

9. $3x-8=19$
10. $\frac{2}{3}x-5=1$
11. $5x+4x-3=11-5x$
12. $5(x-8)-4(2x-3)=11$
13. $3<2x-1<8$
14. $|x|=4$
15. $|2x-3|=17$
16. $|2x-3|=0$
17. $|x-3|<5$

18. $|x-3| \geq 10$

19. $\frac{x}{3} = \frac{2x+1}{4}$

20. $\frac{3}{2}x + \frac{2}{3} = \frac{7}{2}x + \frac{1}{6}$

Solve each system of equations. (Find the point of intersection.)

21. $\begin{cases} y = 2x-1 \\ y = x+5 \end{cases}$

23. $\begin{cases} 2x+3y=7 \\ 3x-3y=8 \end{cases}$

22. $\begin{cases} y = 3x-4 \\ -2x+3y=9 \end{cases}$

24. $\begin{cases} 4x-3y=2 \\ 8x-6y=17 \end{cases}$

Find the slope and y intercept of each line.

25. $y = 5x-2$

26. $2x-y=2$

27. y = 5

28. $5x+6y=12$

Find the equation of the line given:

29. m=-1 & b=5

30. m = $\frac{3}{4}$ & (1,-5)

31. $(3,-8)\ \&\ (8,2)$

Find the equation of the inverse function.

32. y=3x-12

33. $y = \frac{2x-5}{6}$

34. $y = \frac{-3}{4}x + 5$

Simplify each. No decimals or negative exponents.

35. 5^0

36. 4^3

37. $(-8)^2$

38. -8^2

39. $\left(\frac{4}{5}\right)^2$

40. $\left(\frac{4}{5}\right)^{-2}$

41. 5^{-3}

42. 2^{-5}

43. $\left(\frac{5}{2}\right)^{-3}$

44. $x^3 * x^4$

45. $\frac{x^{11}}{x^3}$

46. $\left(3x^2y^5\right)^2$

47. $5x^3y^5 * 9x^4y$

48. $\frac{15x^8y^3w}{35xy^7w}$

49. $\left(4x^3y^{-5}\right)^3$

Find the mean, median, mode, upper and lower quartiles of the following group of numbers.

50. 10, 12, 7, 11, 20, 7, 6, 8, 9

Find each:

51. 6!

52. ${}_8P_3$

53. ${}_8C_3$

Solve each:

54. What is the **probability** of picking a blue marble from a box containing 3 red, 4 green and 2 blue marbles?

55. What are the **odds** of picking a blue marble from a box containing 3 red, 4 green and 2 blue marbles?

56. What is the probability of picking a blue marble and then a red marble from a box containing 3 red, 4 green and 2 blue marbles? (no replacement)

Simplify each. No decimals.

57. $\sqrt{64}$

58. $\sqrt{52}$

59. $5\sqrt{2}-7\sqrt{18}$

60. $\sqrt{\frac{5}{3}}$

61. $3\sqrt{5}*4\sqrt{10}$

62. $\left(3\sqrt{5}\right)^2$

63. $\sqrt[3]{8}$

64. $\sqrt[4]{81}$

65. $\sqrt[3]{40}$

66. $\sqrt[4]{80}$

67. $27^{\frac{1}{3}}$

68. $81^{\frac{3}{4}}$

69. $81^{\frac{-3}{2}}$

70. $\sqrt[3]{250x^{12}w^{19}}$

Factor each completely:

71. x^2-25

72. x^4-16

73. $5x^2-35x$

74. $x^2-11x+28$

75. $2x^2-11x-21$

76. $4x^2+16x-20$

77. $8x^3 + 27$

78. $x^3 - x^2 + 5x - 5$

Solve each:

79. $x^2 = 81$

82. $2x^2 - 5x - 3 = 0$

84. $\sqrt{3x+1} = 5$

85. $\sqrt[3]{2x-1} = 3$

80. $x^2 - 7x + 12 = 0$

83. $x^2 + 4x + 9 = 0$

86. $\sqrt{2x} = x - 4$

81. $3x^2 - 6x - 8 = 0$

Simplify each. (add, sub, dist, or mult):

87. 3x + 4x – 4x + x

90. $6(3x-2) - 4(5x+8)$

93. $(3x-8)^2$

88. $(3x-2) - (5x+8)$

91. $-3x^3(5x^2 - 4x + 7)$

94. $(3x-2)^3$

89. $(3x-2)(5x+1)$

92. $(x+3)(x^2 + 5x - 7)$

95. X & y vary directly. If x=3 when y=8, find x when y=30.

96. X & y vary inversely. If x=3 when y=8, find x when y=30.

Simplify each rational expression.

97. $\frac{3}{x+4} * \frac{x+4}{3}$

98. $\frac{x^2-x-12}{7+x} * \frac{x^2-49}{20x-5x^2}$

99. $\frac{x^2-9}{5x+10} \div \frac{x-3}{5x^2-20}$

100. $\frac{x+5}{x-5} - \frac{3}{x+5}$

Given $f(x)=x^2-4x+5$ & $g(x)=x-7$ find each of the following:

101. f(0)

102. f(3)

103. f(-3)

104. g(-9)

105. f(x)+g(x)

106. f(3w)

107. f(x+2)

108. f(g(8))

109. g(f(8)

110. g(f(x))

111. f(g(x))

Find the slope, distance and midpoint of the given 2 points.

112. $(3,6)\&(4,8)$

113. $(-3,5)\&(-1,-11)$

114. Given a right triangle with sides x and x+3 and hypotenuse 10, find the lengths of the sides.

Graph each on graph paper. Include ***at least*** 2 ordered pairs each.

115. $y = x$

116. $y = .5x - 1$

117. y = -3x+4

118. $3x + 4y = 12$

119. $y < -2x + 1$

120. -2 < x < 3 & -5 < y < 3

121. $y = 3$

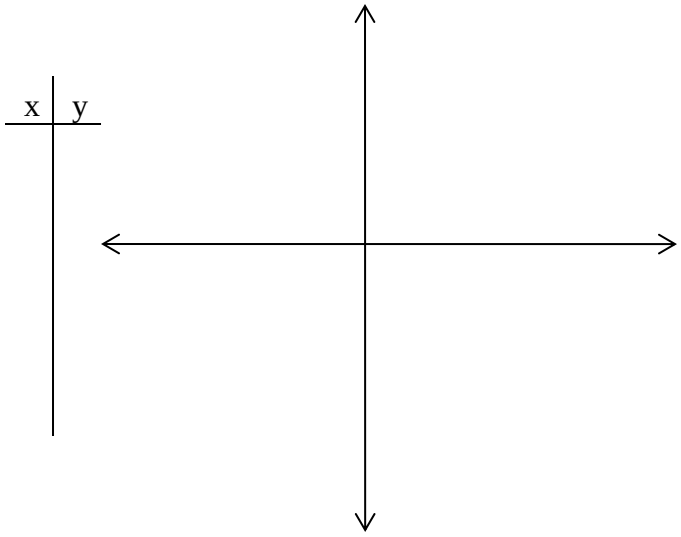
122. $y = x^2$

123. $y = -x^2$

124. $y = x^2 + 2$

125. $y = 2x^2$

126. $y = (x-1)^2 - 4$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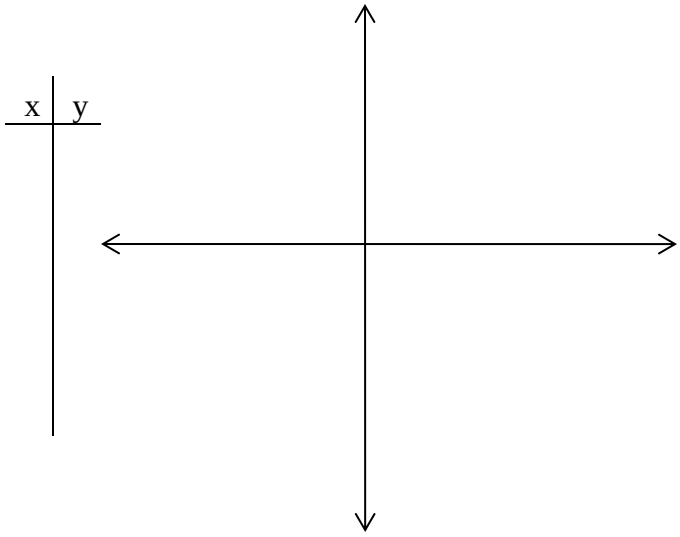
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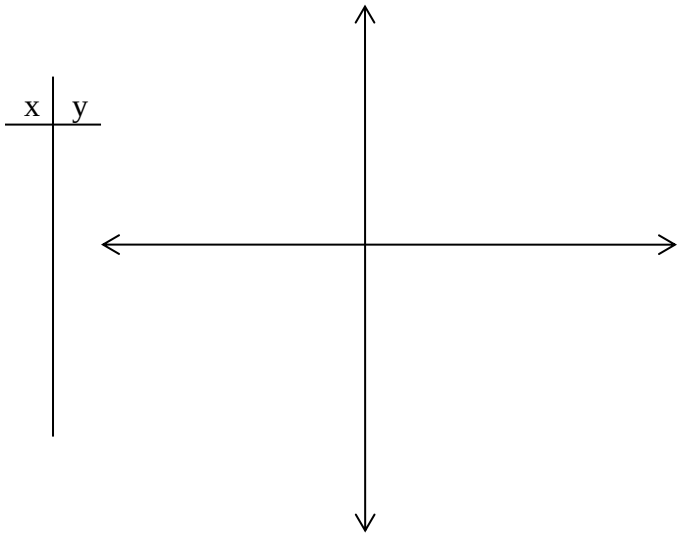
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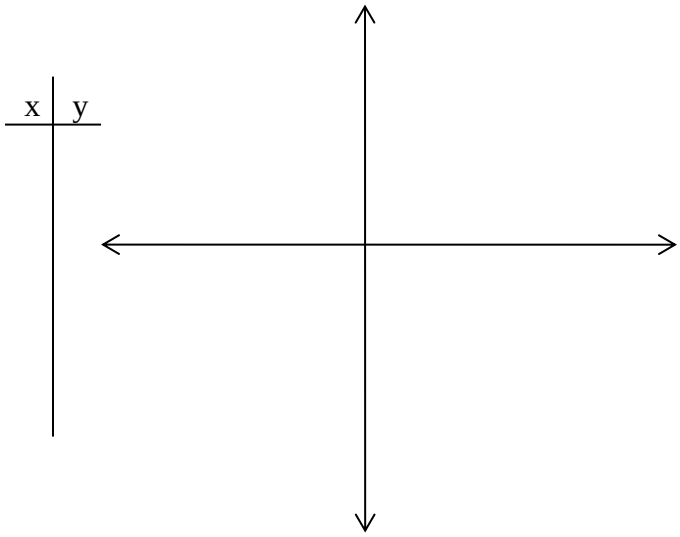
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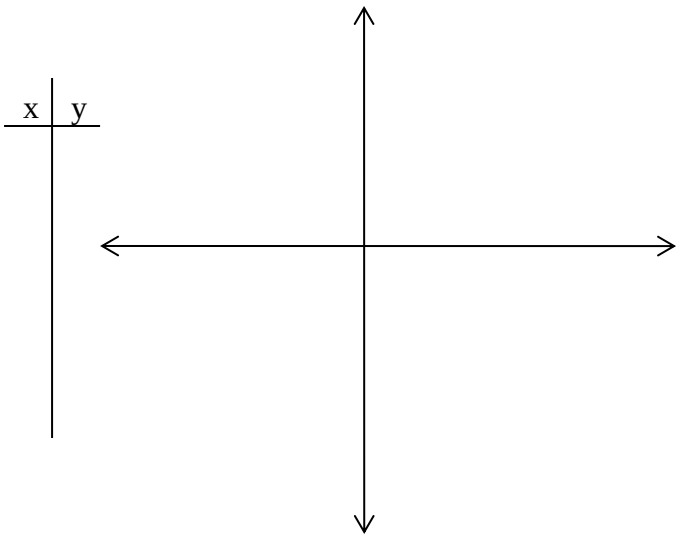
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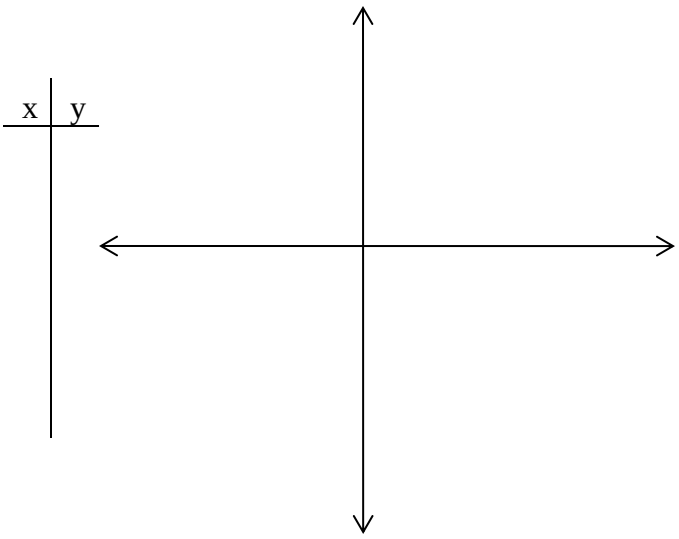
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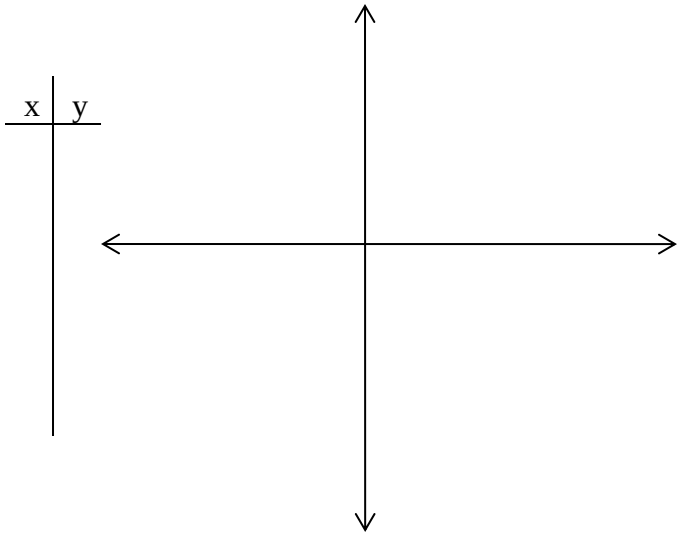
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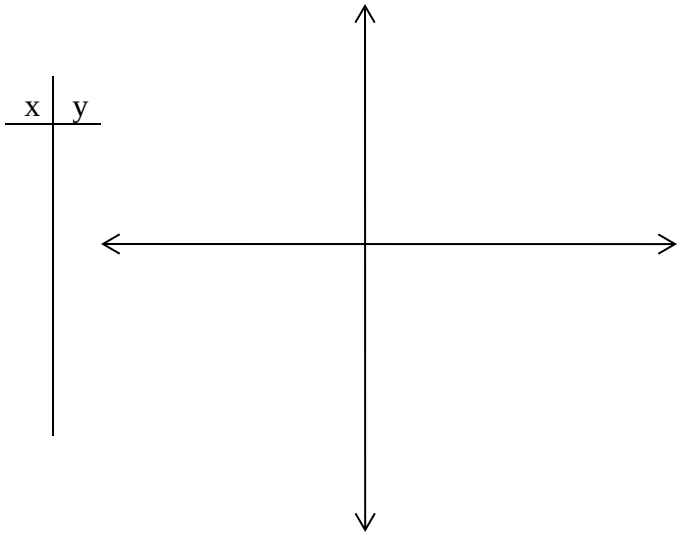
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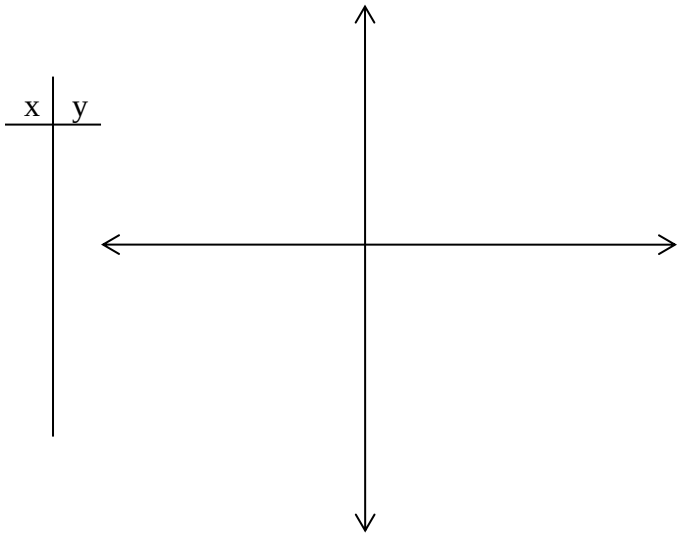
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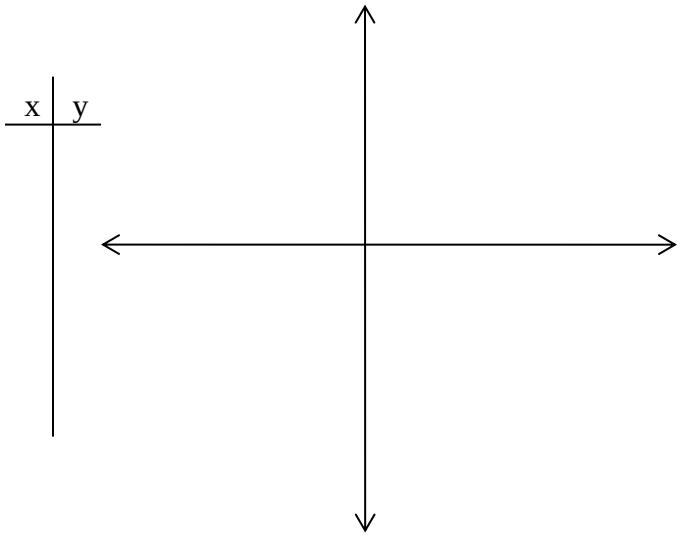
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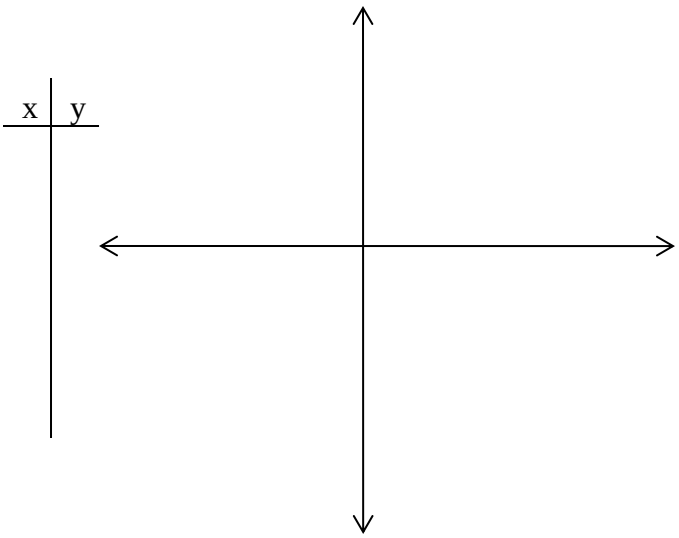
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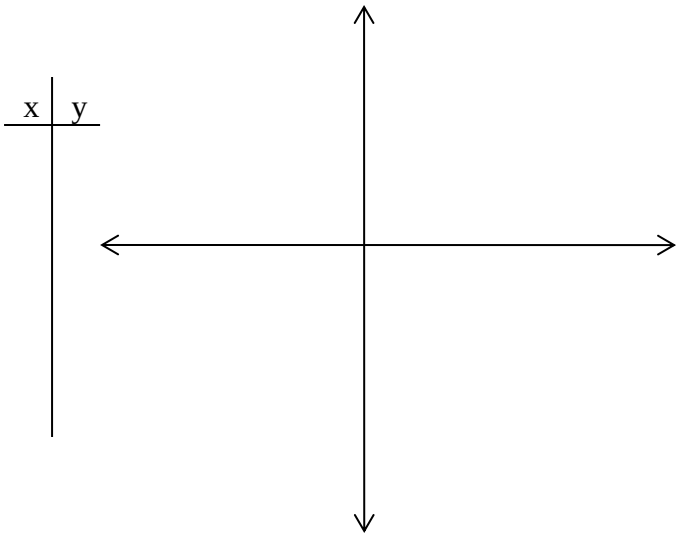
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