ELO All Student Review

Name: _____

MA M 09.3.3.f Solve linear equations and inequalities including absolute value.

Solve the following equations.

1. $x + 6 = -8$

2. $\frac{-3}{4}x = 6$

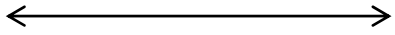
3. $-3x - 7 = 11$

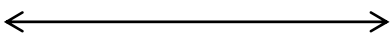
4. $x - 4 = -2x + 2$

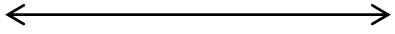
5. $-4x + 5 - 2x = -13$

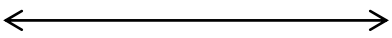
6. $-2(-3x - 4) + 4 = 12$

Solve and graph the following inequalities.

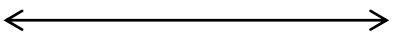
7. $-5 < x - 4$ 

8. $-4x < 12$ 

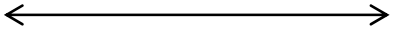
9. $\frac{x}{3} > -5$ 

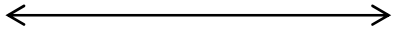
10. $6 \leq -3x$ 

11. $-5x - 4 > 16$ 

12. $-3x - 6 \geq 5x + 10$ 

Graph the following compound inequalities.

13. $-3 < x \leq 8$ 

14. $x > -2$ or $x < -7$ 

Solve and graph the following compound inequalities.

15. $-2 \leq 3x + 1 < 7$ ⟷

16. $-4x + 4 > 5$ or $6 < x - 3$ ⟷

Solve and graph the following absolute value inequalities.

17. $|x - 4| > 16$ ⟷

18. $|2x + 7| < 3$ ⟷

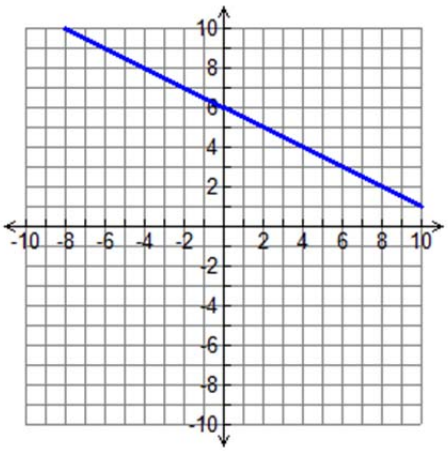
<u>MA M 09.3.1.c Identify the slope and intercepts of a linear relationship from an equation or graph.</u>

19. Identify the slope and y-intercept given the equation: m = b =
$y = -2x + 4$

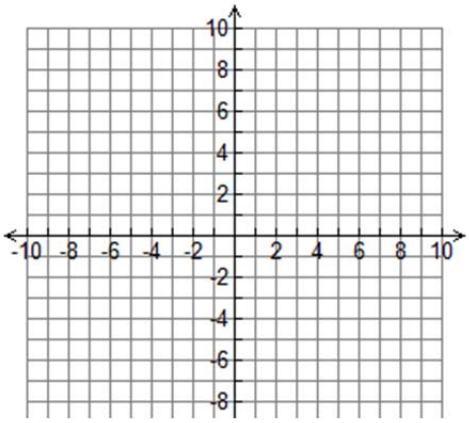
20. Identify the slope and y-intercept given the equation: m = b =
$2x - 4y = -8$

21. Identify the slope and y-intercept given the graph:

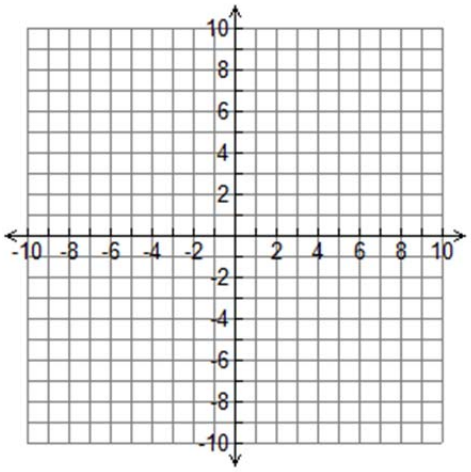
m = b =



22. Graph the following equation: $y = -\frac{3}{4}x + 5$

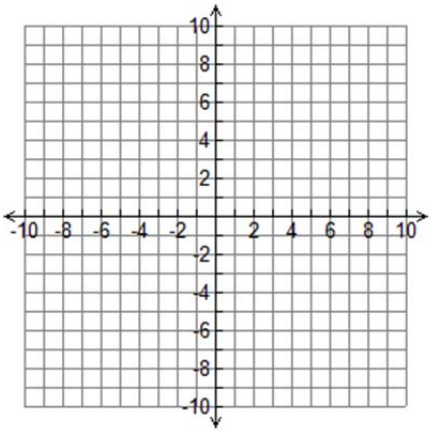


23. Graph the following equation: $5x - 2y = -10$



24. Graph the following table of values:

x	-2	-1	0	1	2
y	5	2	-1	-4	-7



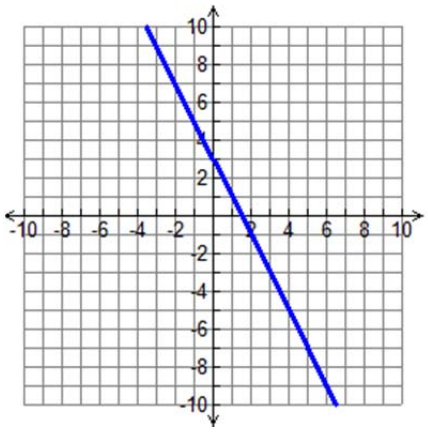
25. Find the slope of the line that would be parallel to the equation:

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

26. Find the slope of the line that would be parallel to the equation:

$3x - 2y = 6$

27. Find the slope of the line that would be parallel to the line graphed:



28. Find the slope of the line that would be parallel to the line that goes through the following points:

(-3, 6) and (-1, 5)

29. Write the equation of the line that would be parallel to y = 3x – 1 and goes through the point (2, -4)

30. Write the equation of the line that would be parallel to x + 2y = 4 and goes through the point (-6, 0)

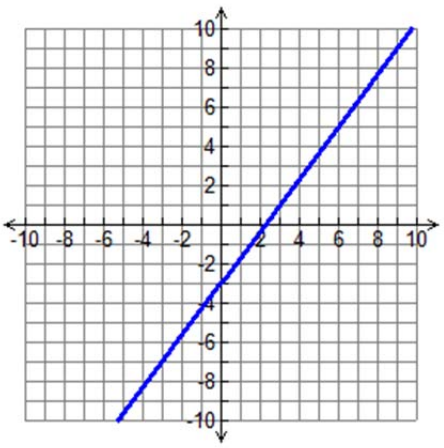
31. Find the slope of the line that would be perpendicular to the equation:

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

32. Find the slope of the line that would be perpendicular to the equation:

4x + 3y = -9

33. Find the slope of the line that would be perpendicular to the line graphed:



34. Find the slope of the line that would be perpendicular to the line that goes through the following points:

(8, 0) and (2, -4)

35. Write the equation of the line that would be perpendicular to $y = x + 4$ and goes through the point (-3, 5)

36. Write the equation of the line that would be perpendicular to $6x – 3y = 6$ and goes through the point (2, -9)

37. Given the figure to the right, label two lines (A and B) that are parallel to one another.

38. Given the figure to the right, label two lines (C and D) that are perpendicular to one another.

MA M 09.3.3.I Analyze and solve systems of two linear equations in two variables algebraically and graphically.

Solve the following systems of equations.

39. $2x + 4y = -22$
$-2x + y = 7$

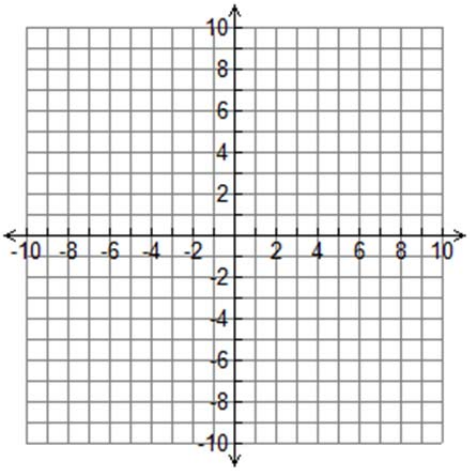
40. $6x – 3y = -3$
$y = 3x + 1$

Solve the following systems of equations

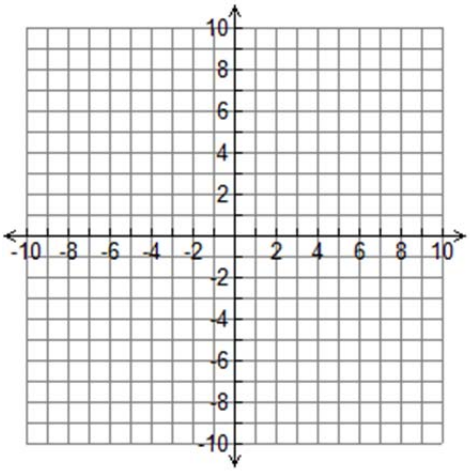
41. $3x - 5y = -2$
$5x - 10y = -10$

42. $-5x - 5y = -15$
$6x + 2y = -2$

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



44. $y = 2x - 5$
$y = 2x + 6$



MA M 09.3.3.a Simplify algebraic expressions involving exponents.

Simplify the following expressions.

45. $(3xy^2)(-2x^4y^5)$

46. $(-3xy^4)^3$

47. $\frac{3xy^3}{9y^2}$

48. $\frac{x^{-4}y^5}{x^3y^{-2}}$

49. $(2xyz)^0$

50. $-6x^{-3}y^5$

Simplify the following expressions.

51. $\dfrac{(3x^2y^4)^3}{(2xy^6)^2}$

52. $\left(\dfrac{2x^3y}{3x^2y^4}\right)^2$

MA M 09.3.3.b – Students will add and subtract polynomials.

Simplify the following expressions.

53. $(x^3 + 2x - 4) + (3x^2 - x + 1)$

54. $(2x^2 + 4x - 5) - (3x^2 - 2x + 8)$

55. $(2x^2 - x - 4x^3) + (3x^3 + 6x - 6x^2)$

56. $(3x + 5 - 3x^2) - (x^2 - 3x - 7)$

MA M 09.3.3.c – Students will multiply and divide polynomials by a monomial.

Simplify the following expressions.

57. $2x^2(5x^3 + 7y - 2x^2y)$

58. $(x - 6)(x - 3)$

59. $(x + 4)(2x - 5)$

60. $(3x - 4)^2$

61. $(3x + 1)(x^2 - x + 6)$

62. $\dfrac{3y^3 - 18y^2 + 9y}{3y}$

MA M 09.3.3.d – Students will factor polynomials.

Factor the following.

63. $5x^2 - 20x^3$

64. $6x^2y + 9x^3y^2$

65. $x^2 + 9x + 8$

66. $3x^2 - 10x - 8$

67. $9x^2 + 12x + 4$

68. $x^2 - x - 20$

69. $2x^2 + 3x - 20$

70. $4x^2 - 25$

MA M 09.3.3.h – Students will solve quadratic equations.

Solve the following.

71. $(x - 6)(2x + 1) = 0$

72. $x(x - 5) = 0$

73. $x^2 - 7x - 30 = 0$

74. $-3x^2 - 13x + 10 = 0$

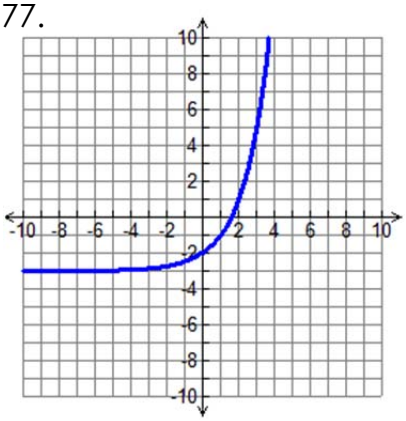
75. $2x^2 + 15x + 7 = 0$

76. $9x^2 - 100 = 0$

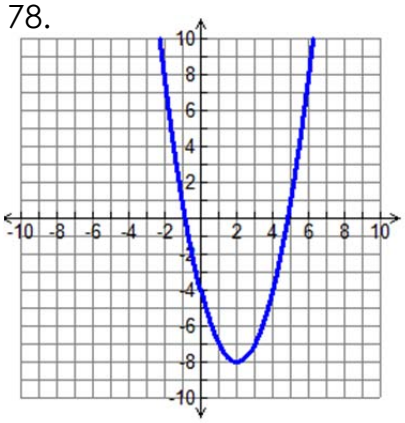
MA M 09.3.1.d – Students will identify characteristics of linear, quadratic and exponential functions.

Classify the following as a linear, quadratic or exponential function.

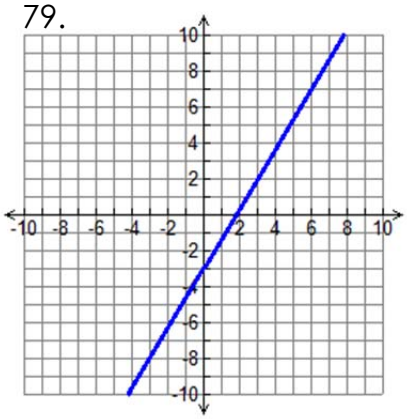
77.



78.



79.



80.

x	–2	–1	0	1	2
y	–10	–7	–4	–1	2

81.

x	0	1	2	3	4
y	1	5	25	125	625

82.

x	–1	0	1	2	3
y	4	1	0	1	4

MA M 09.3.3.n – Students will simplify radical expressions and solve radical equations.

Simplify the following.

83. $\sqrt{50}$

84. $5\sqrt{27}$

85. $-3\sqrt{40}$

86. $3\sqrt{12} \bullet \sqrt{6}$

Simplify the following.

87. $\frac{1}{\sqrt{3}}$

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

89. $\sqrt{20}+6\sqrt{5}-3\sqrt{5}$

90. $\sqrt{54}+\sqrt{24}$

Solve the following.

91. $\sqrt{x+2}=6$

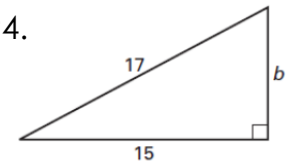
92. $2\sqrt{x-4}=10$

93. $4\sqrt{2x+3}+8=12$

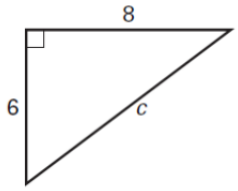
MA M 10.2.1.e – Students will identify and apply right triangle relationships.
MA M 10.2.4.b Use geometric models to visualize, describe, and solve problems.

Find the length of the unknown side.

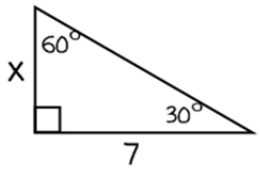
94.



95.



96.



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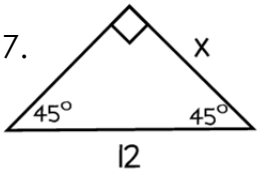

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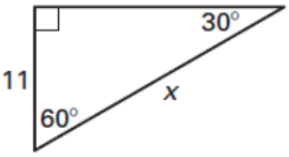

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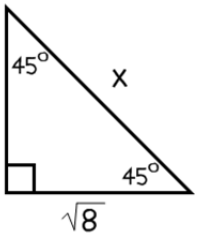
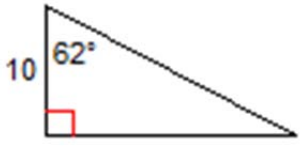


Find the length of the unknown side.

100.

101.

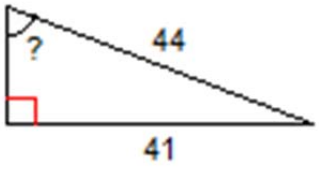


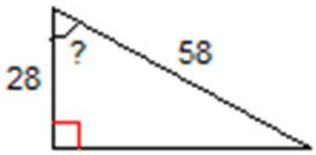
102.

103. You are flying a kite and have let out 80 m of string. The kite's angle of elevation with the ground is 40°. If the string is stretched straight, how high is the kite above the ground?

104. From the top of a lighthouse 210 feet high, the angle of depression of a boat is 27°. Find the distance from the boat to the foot of the lighthouse. The lighthouse was built at sea level.

Find the measure of the unknown angle.

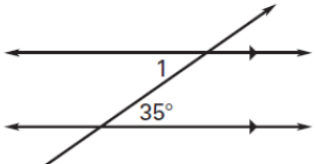
105. 

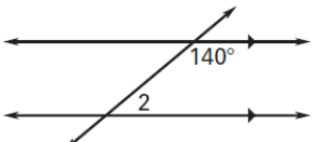
106. 

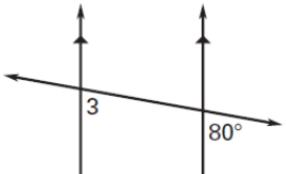
106. A 50-meter vertical tower is braced with a cable secured at the top of the tower and tied 30 meters from the base. What angle does the cable form with the vertical tower?

MA M 10.2.1.d Apply geometric properties to solve problems.

Find the measure of the numbered angle .

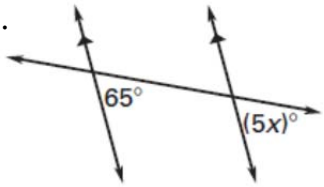


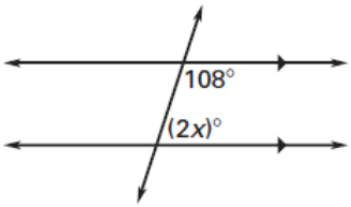


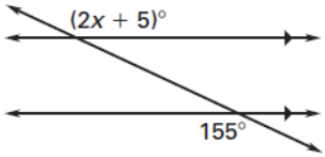


107. 108. 109.

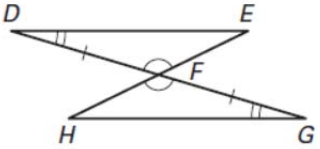
Find the value of x.

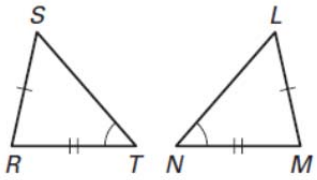
110. 

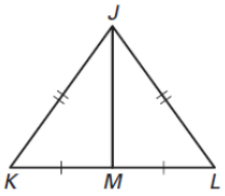
111. 

112. 

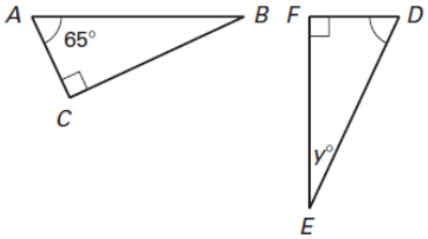
State the postulate or theorem (SSS, SAS ASA, AAS, or HL) you would use to prove the triangles are congruent.

113. 

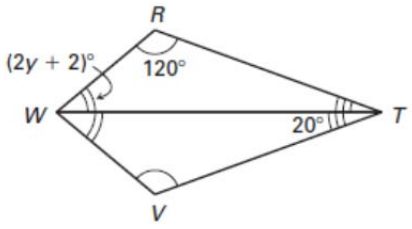
114. 

115. 

116. Given that ΔABC ≅ ΔDEF, find the value of y.



117. Given that ΔRTW ≅ ΔVTW, find the value of y.



<u>MA M 10.2.2.b – Students will apply the midpoint formula.</u>

Find the coordinates of the midpoint of the segment with the given endpoints.

118. S (4, -1) and T (6, 0)

119. L (4,2) and P (0, 2)

Use the given endpoint R and midpoint M of RS to find the coordinates of the other endpoints.

120. R (6,0), M (0,2)

121. R (3,4), M (3, -2)

MA M 10.2.2.c – Students will apply the distant formula.

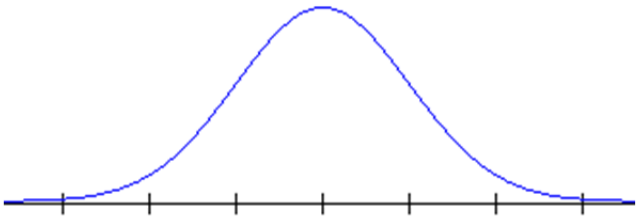
Find the distance between the following points. Round your answer to the nearest hundredth.

122. (-4, 5) (2, 3)

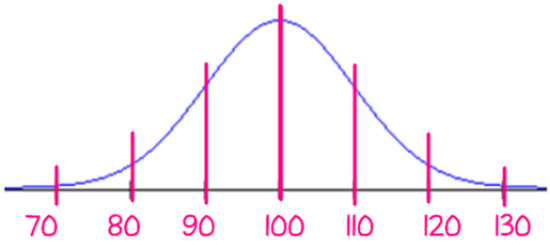
123. (-1, -3) (2, -7)

MA M 09.4.1.d Students will describe the shape and determine the spread (variance, standard deviation) and outliers of a data set.

124. Graph a normal distribution with a mean of 18 and a standard deviation of 3.



125. Indicate the mean and standard deviation.



126. Indicate the outliers, if any, of the following set of data. 1, 2, 2, 4, 5, 16

MA M 09.4.3.d Students will determine the odds of an event.

127. What is the probability that the spinner stops on an odd number?

128. What is the probability of landing on the 8 or the 11?

129. What is the probability of landing on the 5 or a multiple of 2?

130. What are the odds in favor of stopping on 14?

131. What are the odds against stopping on a multiple of 3?

132. In a bag of blue and red marbles, the probability of choosing a red marble is 3 out of 8. What are the odds of choosing a red marble?

MA M 09.4.3.b Students will compute probabilities for independent compound events.

A jar contains 8 marbles: 3 black, 2 yellow, 2 blue, and 1 purple. Two marbles are drawn with replacement. Determine the following.

133. P(black and yellow)

134. P(blue and blue)

A die is rolled and spinner numbered 1-4 is spun. Determine the following.

135. P(Rolling a 3 and spinning a 1)

136. P(rolling an even # and spinning an odd #)

MA M 09.4.3.c Students will compute probabilities for dependent events.

137. At a picnic, Julio reaches into an ice-filled cooler containing 8 regular soft drinks and 5 diet soft drinks. He removes a can and drinks it. What is the probability of Julio and the next person selecting a regular soft drink?

138. You randomly select 2 kids from a classroom of 6 girls and 4 boys. Each time you select a kid, they leave the room. What is the probability of picking a girl <u>both</u> times.