

**ELCA Honors Geometry Summer Assignment**

\*This assignment is due to your geometry teacher on the first day of school.

**Direction: Basic Operations Simplify.**

1. \_\_\_\_\_  $-2 + -9$     3. \_\_\_\_\_  $-18 + 24$     5. \_\_\_\_\_  $-28 - 42$     7. \_\_\_\_\_  $(-5)^2$

2. \_\_\_\_\_  $26 - 54$     4. \_\_\_\_\_  $15 - (-18)$     6. \_\_\_\_\_  $9 + -14$     8. \_\_\_\_\_  $-5^2$

(#7 & 8 DO NOT have the same answer, do you know why?)

**Direction: Order of operation Evaluate with out the use of a calculator**

9. \_\_\_\_\_  $5 + 3 - 12 \cdot 2$     10. \_\_\_\_\_  $8(3 + 4^2) - 12 \div 2$     11. \_\_\_\_\_  $2^3 - (-2) + 6 - 8 \div 2^2$

**Directions: Simplifying Expressions Use the distributive property and combine like terms to simplify completely.**

12. \_\_\_\_\_  
 $4m + 9 - 7m + m - 17$

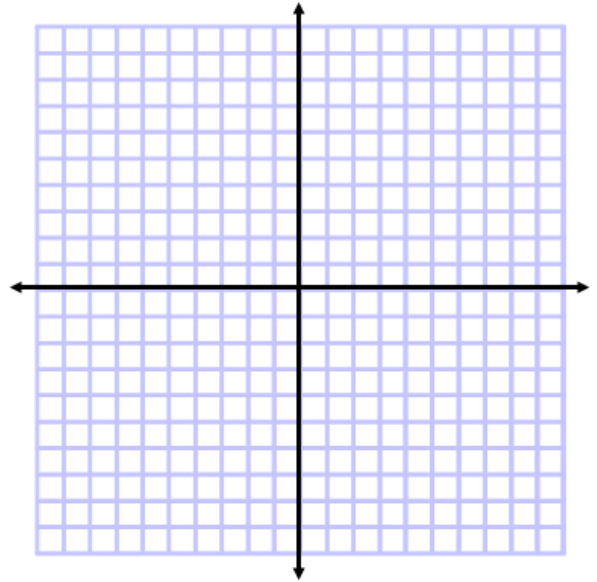
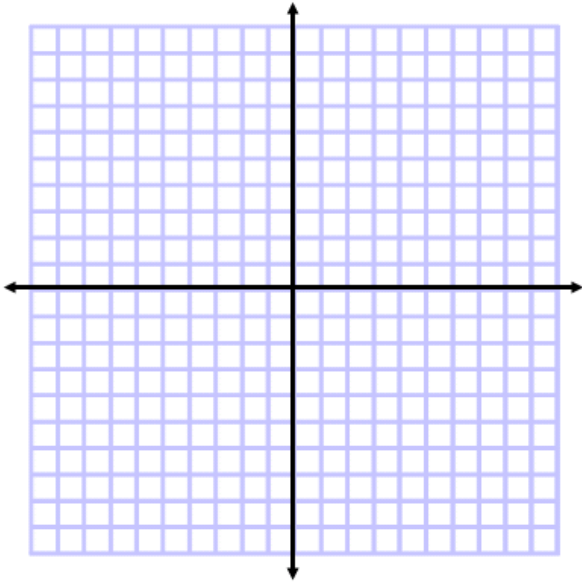
13. \_\_\_\_\_  
 $3x + 5(2 - x)$

14. \_\_\_\_\_  
 $2(m + x) - 3(m - 4x)$

**Directions: Graphing Linear Equations** Graph each of the following on the coordinate plane provided.

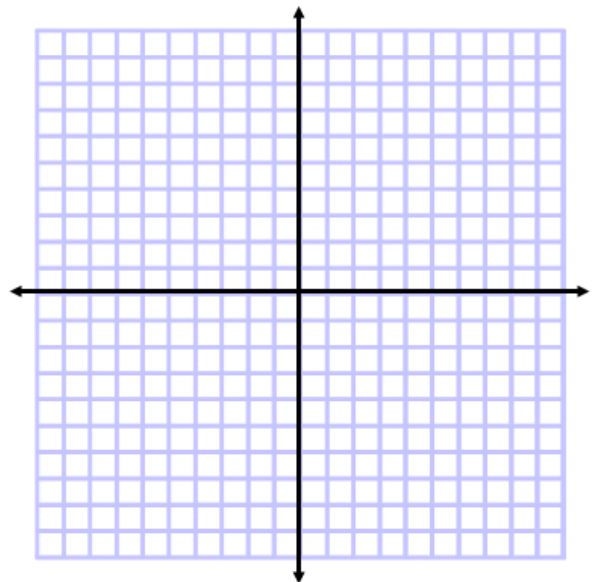
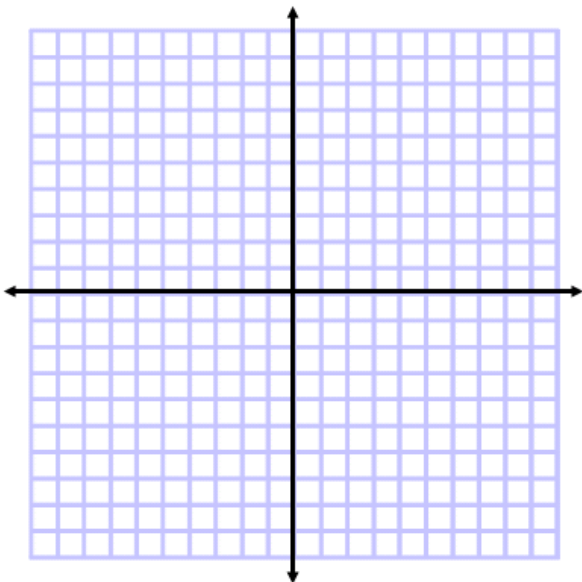
15.  $y = -5$

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



16.  $x = 3$

18.  $y = 5x - 4$



**Directions: Slope** Use the slope formula to find the slope of the line containing each set or points.

19. \_\_\_\_\_ (3, 6), (-6, 0)

20. \_\_\_\_\_ (-7, 2), (-1, -4)

21. \_\_\_\_\_ (5, 1), (5, 4)

**Directions: Solving System of Equations You may use any of the following methods: substitution, multiplication/addition.**

22. \_\_\_\_\_

$3x + 4y = -4$

$x + 2y = 2$

23. \_\_\_\_\_

$x - 2y = 3$

$2x - 4y = 7$

24. \_\_\_\_\_

$-5x + y = 11$

$5x + 2y = 7$

**Directions: Simplifying and Radicals and Rationalizing the Denominator Simplify each of the following completely and rationalize the denominators if needed. DO NOT find a decimal approximation. Leave your answer in simplified radical form if needed.**

\*Radicals are in simplest form when there are no perfect square factors in the radicand. The denominator is rationalized when there are no irrational numbers (radicals) in the denominator or fractions in the radicand.

25. \_\_\_\_\_  $\sqrt{300}$

28. \_\_\_\_\_  $\sqrt{4900}$

31. \_\_\_\_\_  $(2\sqrt{3})^2$

26. \_\_\_\_\_  $\sqrt{12}$

29. \_\_\_\_\_  $3\sqrt{5} \cdot 5\sqrt{3}$

32. \_\_\_\_\_  $\sqrt{3} \cdot \sqrt{5}$

27. \_\_\_\_\_  $\sqrt{250}$

30. \_\_\_\_\_  $3\sqrt{32}$

33. \_\_\_\_\_  $\frac{5}{\sqrt{6}}$

Directions: Basic Geometry Terms Give the best name for each for the figures illustrated below.

34. \_\_\_\_\_



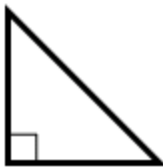
39. \_\_\_\_\_



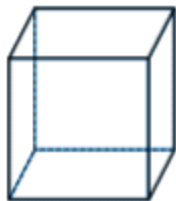
44. \_\_\_\_\_



35. \_\_\_\_\_



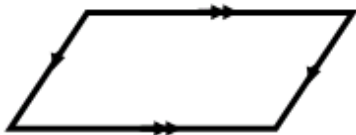
40. \_\_\_\_\_



45. \_\_\_\_\_



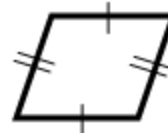
36. \_\_\_\_\_



41. \_\_\_\_\_



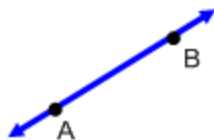
46. \_\_\_\_\_



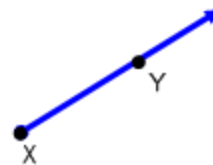
37. \_\_\_\_\_



42. \_\_\_\_\_



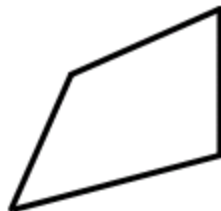
47. \_\_\_\_\_



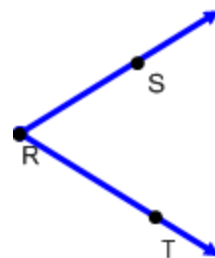
38. \_\_\_\_\_



43. \_\_\_\_\_

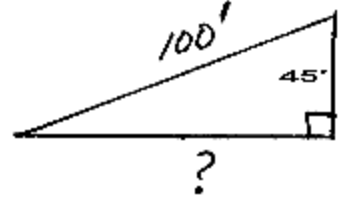


48. \_\_\_\_\_

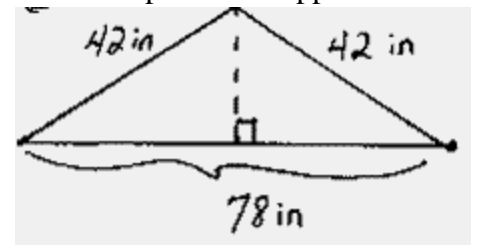


**Directions: Pythagorean Theorem Read each of the following carefully and answer each question completely.**

49. \_\_\_\_\_ Emma is training to be an Amazon Jungle Tour guide. As part of her training, she must climb a slanted rope net into a tree that is 45 feet high. To the nearest hundredth of a foot, how far away from the tree is the net anchored if the net is 100 feet long?

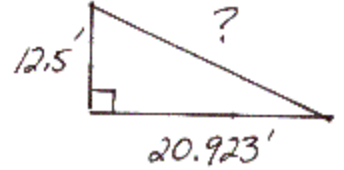


50. \_\_\_\_\_ John has a Pythagorean problem. You see he is planning a big bonfire/campout on his pig farm. He wants to invite Jake, Ron, Frank, Luke Jim, and Matt. The problem is that they need more than one tent. Well Jon found an extra tent in his root cellar. It only has a little bit of mold on it, but it smells like old pig feet. He needs to get it set up and aired out before the party, but the support stick is missing. If the tent is 78 inches on the bottom and 42 inches on each side, to the nearest inch, how tall of a stick does he need to find to replace the support stick to his tent?



Name: \_\_\_\_\_

51. \_\_\_\_\_ Billy Bob works for an all Famous Flying Lizards Circus. He designed the ramps that the lizards run down in preparation for flight. He must be very precise in his measurements. Each lizard in the company has his own "ramp of flight" that has been designed for their body weight and length. The circus has just spent \$3,000 to purchase the rare Komodo Dragon, Orange Speckled, and Gecko Lizard named Frank. Franks is 4 feet long and weights 49.5 pounds. He will need a ramp 12.5 feet high with a base 20.923 feet long. To the nearest thousandth of a foot, ho long will the ramp need to be?



**Directions: Terms Be familiar with the following terms as your prepare for Honors Geometry**

- 52. Point
- 53. Lines
  - a. Segment
  - b. Ray
- 54. Plane
- 55. Congruent Segments
- 56. Collinear Points
- 57. Coplanar Points
- 58. Midpoint
- 59. Bisects
- 60. Angle
  - a. Vertex
  - b. Side
  - c. Right
  - d. Obtuse
  - e. Acute
  - f. Straight
  - g. Reflex
  - h. Congruent Angles
  - i. Adjacent Angles
- 61. Measure of an angle (degree)
- 62. Protractor
- 63. Congruent Angles
- 64. Angle Bisector
- 65. Parallel Lines
- 66. Perpendicular Lines
- 67. Right Angles
- 68. Acute Angle
- 69. Obtuse Angle
- 70. Vertical Angles
- 71. Linear Pair
- 72. Complementary Angles
- 73. Supplementary Angles
- 74. Polygons
- 75. Diagonal
- 76. Convex
- 77. Concave
- 78. Equilateral
- 79. Equiangular
- 80. Regular Polygon
- 81. Right Triangle
  - a. Hypotenuse
  - b. Legs
- 82. Acute Triangle
- 83. Obtuse Triangle
- 84. Scalene Triangle
- 85. Equilateral Triangle
- 86. Isosceles Triangle
  - a. Base Angles
  - b. Vertex angle
  - c. Legs
- 87. Trapezoid
  - a. Base Angles
  - b. Legs
- 88. Kite
- 89. Parallelogram
- 90. Rhombus
- 91. Rectangle
- 92. Square
- 93. Circle
- 94. Radius
- 95. Diameter
- 96. Congruent Circles
- 97. Concentric Circles
- 98. Arc of a circle
  - a. Endpoints
  - b. Congruent Arcs
  - c. Adjacent Arcs
  - d. Length of Arcs
  - e. Measure of Arcs
  - f. Minor Arcs
  - g. Major Arcs
- 99. Semicircle
- 100. Central Angle
- 101. Chord
- 102. Tangent
- 103. Point of Tangency
- 104. Probability
- 105. Inductive Reasoning
- 106. Deductive Reasoning
- 107. Theorem
- 108. Pythagorean Triples
- 109. Pythagorean Theorem
- 110. Quadratic formula
- 111. Factor
- 112. Foil
- 113. Volume
- 114. Prism
- 115. Cylinder
- 116. Pyramid
- 117. Cone
- 118. Sphere
- 119. Hemisphere
- 120. Sine Ratio
- 121. Cosine Ratio
- 122. Tangent Ratio