Geometry Summer Assignment

Please complete all work on a separate sheet of paper and only place answers on this packet.

1. **Solve for $y$.**

$$\frac{6}{11} = \frac{y}{3}$$

$y =$ ____

2. **Solve for $p$.**

$$\frac{8}{9} = \frac{12}{p}$$

$p =$ ____

3. **Solve for $n$.**

$$\frac{11}{n} = \frac{8}{5}$$

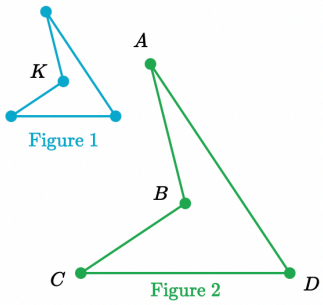
$n =$ ____

4. **Solve for $t$.**

$$\frac{4}{3} = \frac{t}{7}$$

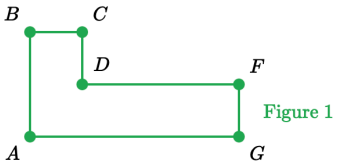
$t =$ ____

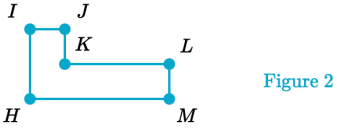
5. Figure 2 is a scaled copy of Figure 1.




**Identify the point in Figure 2 that corresponds to point $K$ in Figure 1.**

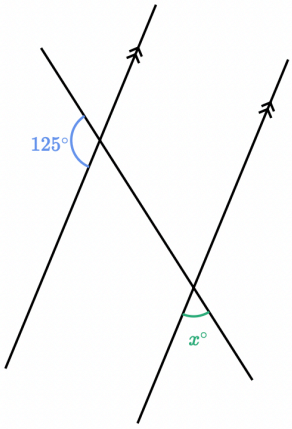
6. Figure 2 is a scaled copy of Figure 1.



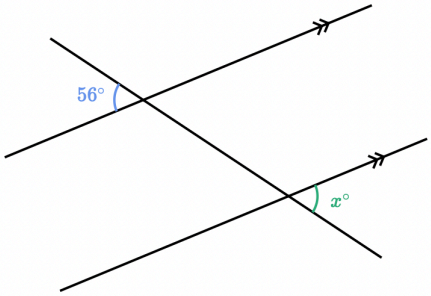

**Identify the side in Figure 2 that corresponds to side $\overline{FG}$ in Figure 1.**

7. Below are two parallel lines with a third line intersecting them.




$x =$ ☐ °

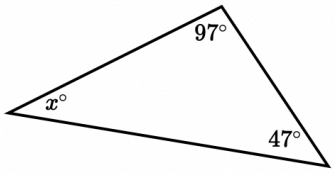
8. Below are two parallel lines with a third line intersecting them.




$x =$ ☐ °

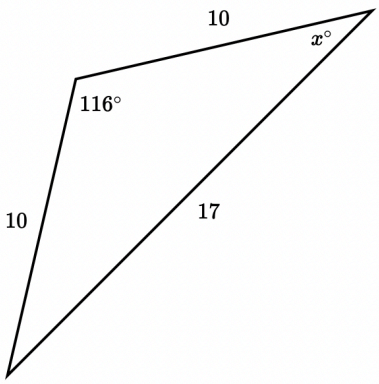
9. **Find the value of $x$ in the triangle shown below.**

$x =$ ☐ °



10. **Find the value of $x$ in the triangle shown below.**

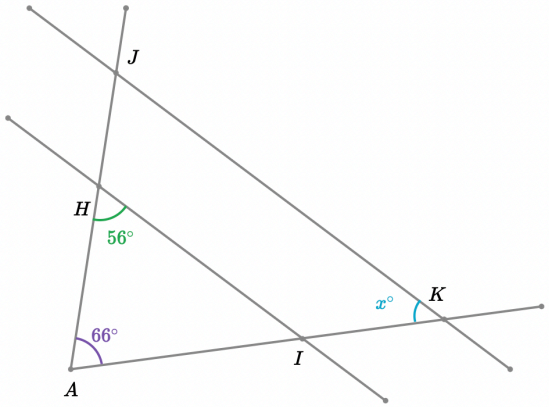
$x =$ ____ °




11. In the following diagram, $\overline{HI}$ is parallel to $\overline{JK}$.

**What is the measure of $\angle x$?**

*Angles are not necessarily drawn to scale.*




$\angle x =$ ____ °

12. A scale on a hiking map shows that $3$ inches represents $1.25$ miles.

**What number of inches on the map represent $10$ actual miles?**

____ inches

13. A scale on a blue print drawing of a house shows that $10$ centimeters represents $2$ meters.

**What number of actual meters are represented by $18$ centimeters on the blue print?**

____ meters

14. **Without using a calculator, fill in the blanks with two consecutive integers to complete the following inequality.**

$\square < \sqrt{97} < \square$

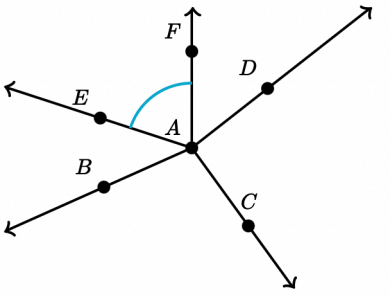
15. **Without using a calculator, order the following numbers from least to greatest.**

$\sqrt{39}$ $6$ $5$

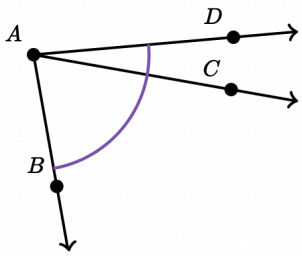
16. **Order the following numbers from least to greatest.**

$\sqrt[3]{27}$ $2\frac{1}{3}$ $\sqrt{7}$

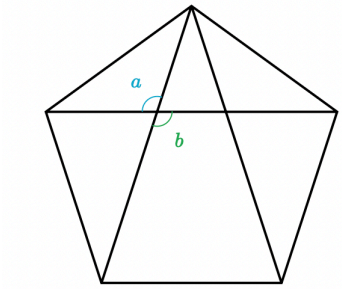
17. **What is a name for the marked angle?**



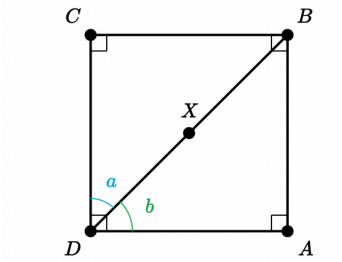

18. **What is a name for the marked angle?**



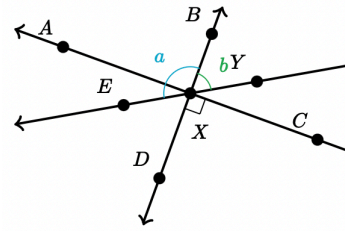
19. What is the relationship between $\angle a$ and $\angle b$?




20. What is the relationship between $\angle a$ and $\angle b$?

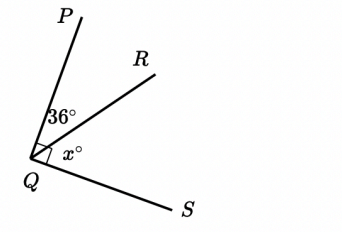



21. What is the relationship between $\angle a$ and $\angle b$?




22. What is the measure of $\angle x$?

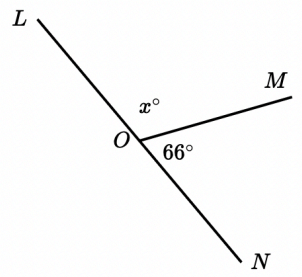
*Angles are not necessarily drawn to scale.*




$x =$ ____ °

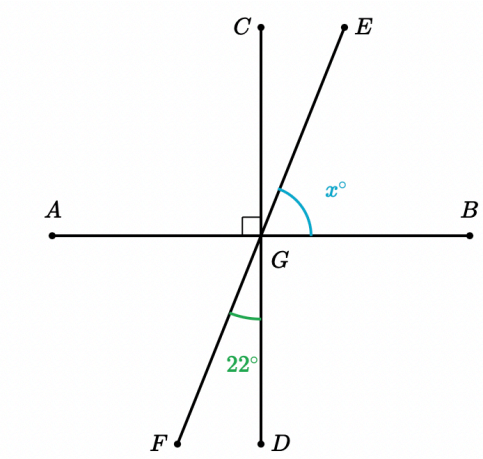
23. **What is the measure of $\angle x$?**

*Angles are not necessarily drawn to scale.*




$x =$ ____ °

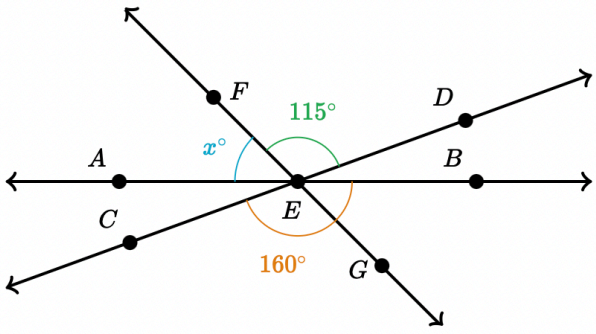
24.




*NOTE: Angles not necessarily drawn to scale.*

$x =$ ____ °

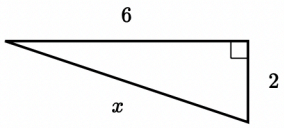
25.




*NOTE: Angles not necessarily drawn to scale.*

$x =$ ____ °

26. Find the value of $x$ in the triangle shown below.




Choose 1 answer:

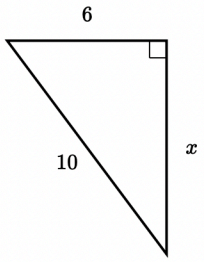
(A) $x = \sqrt{32}$

(B) $x = \sqrt{40}$

(C) $x = 8$

(D) $x = 12$

27. Find the value of $x$ in the triangle shown below.




Choose 1 answer:

(A) $x = 9$

(B) $x = \sqrt{60}$

(C) $x = \sqrt{136}$

(D) $x = 8$

28. Factor as the product of two binomials.

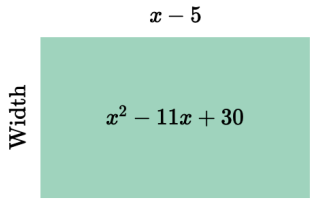
$x^2 + 10x + 24 =$ ☐

29. Factor completely.

$6x^2 - 30x + 24 =$ ☐

30. The rectangle below has an area of $x^2 - 11x + 30$ square meters and a length of $x - 5$ meters.

**What expression represents the width of the rectangle?**




$\text{Width} =$ ☐ meters

31. **Factor as the product of two binomials.**

$x^2 + 3x + 2 =$ ☐

32. **Factor completely.**

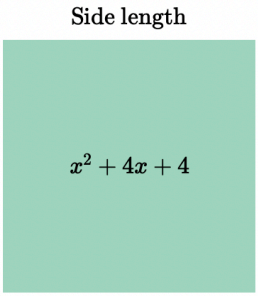
$6x^2 - 18x - 60 =$ ☐

33. **Factor completely.**

$-2x^2 + 20x - 48 =$ ☐

34. The square below has an area of $x^2 + 4x + 4$ square meters.

**What expression represents the length of one side of the square?**




$\text{Side length} =$ ☐ meters

35. **Factor as the product of two binomials.**

$9 - 6x + x^2 =$ ☐

36. **Factor as the product of two binomials.**

$x^2 - 2x + 1 =$ ☐

37. **Factor completely.**

$3x^2 + 30x + 75 =$ ☐

38. **Factor completely.**

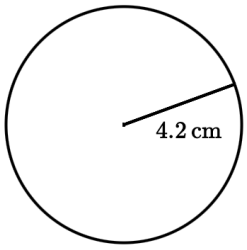
$81x^2 + 180x + 100 =$ ☐

39. The radius of a circle is $2$ units.

**What is the diameter of the circle?**

☐ units

40. **What is the radius and diameter of the following circle?**




Radius $=$ ☐ $\text{cm}$

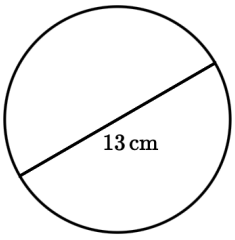
Diameter $=$ ☐ $\text{cm}$

41. The diameter of a circle is $16$ units.

**What is the radius of the circle?**

[ ] units

42. **What is the radius and diameter of the following circle?**




Radius = [ ] $\text{cm}$

Diameter = [ ] $\text{cm}$

43. A circle has a circumference of $907.46$ units.

**What is the diameter of the circle?**
*Use 3.14 for $\pi$ and enter your answer as a decimal.*

[ ] units

44. **Suppose the diameter of a circle is $4$ units. What is its circumference?**
*Use 3.14 for $\pi$ and enter your answer as a decimal.*

[ ] units

45. A circle has a circumference of $452.16$ units.

**What is the radius of the circle?**
*Use 3.14 for $\pi$ and enter your answer as a decimal.*

[ ] units

46. **Suppose the radius of a circle is $3$ units. What is its circumference?**
*Use 3.14 for $\pi$ and enter your answer as a decimal.*

[ ] units

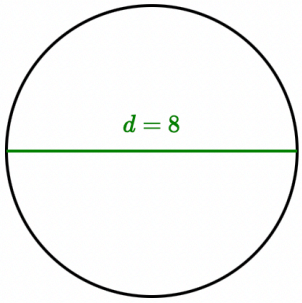
47. **Find the area of a circle with a radius of $8$.**
*Either enter an exact answer in terms of $\pi$ or use $3.14$ for $\pi$ and enter your answer as a decimal.*

$\square$ units$^2$

48. **Find the area of a circle with a circumference of $31.4$ units.**

$\square$ units$^2$

49. **What is the area of the following circle?**
*Either enter an exact answer in terms of $\pi$ or use $3.14$ for $\pi$ and enter your answer as a decimal.*




$\square$ units$^2$

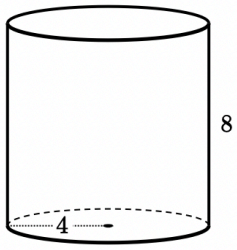
50. **Find the area of a circle with a circumference of $6.28$ units.**

$\square$ units$^2$

51. **Find the area of a circle with a diameter of $4$.**
*Either enter an exact answer in terms of $\pi$ or use $3.14$ for $\pi$ and enter your answer as a decimal.*

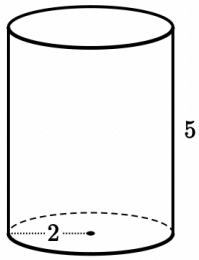
$\square$ units$^2$

52. **Find the volume of the cylinder.**
*Either enter an exact answer in terms of $\pi$ or use $3.14$ for $\pi$.*



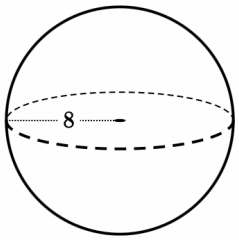

$\square$ units$^3$

53. **Find the volume of the cylinder.**
*Either enter an exact answer in terms of $\pi$ or use $3.14$ for $\pi$.*




$\square$ units$^3$

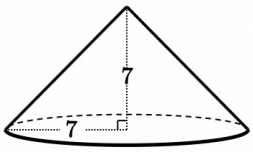
54. **Find the volume of the sphere.**
*Either enter an exact answer in terms of $\pi$ or use $3.14$ for $\pi$ and round your final answer to the nearest hundredth.*




$\square$ units$^3$

55. **Find the volume of the cone.**

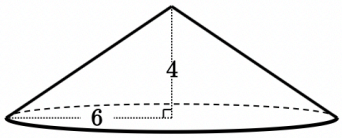
*Either enter an exact answer in terms of $\pi$ or use $3.14$ for $\pi$ and round your final answer to the nearest hundredth.*




$\square$ units$^3$

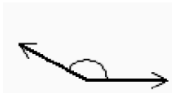
56. **Find the volume of the cone.**

*Either enter an exact answer in terms of $\pi$ or use $3.14$ for $\pi$ and round your final answer to the nearest hundredth.*




$\square$ units$^3$

57. Which angle is a right angle?

A 

B 

C 

D 

58. Solve by substitution:

$3x + 2y = -4$

$y = 4x - 2$

59. **Solve by elimination:**

$3x + 6y = 9$

$x - 6y = 11$

60. Solve the system using the addition method:

$2x - 4y = 12$

$3x + 4y = 8$

61. **Find the sum.**

$\left(2a^7 + 3a^3 - 6\right) + \left(-2a^3 + 4 + 6a^7\right)$

62. **Simplify the expression.**

$\left(5q^5 + 4\right) - \left(2q^3 + 9\right) + \left(6q^5 - q^3\right)$

63. **Find the difference.**

$\left(6b^3 + 3b^2 + 8\right) - \left(2b^3 - 8b^2 + 6b - 5\right)$

**Solve the equation.**

64. $a^2 = 144$

65. $9w^2 = 225$

66. $2n^2 = 72$

**Simplify the expression.**

67. $\sqrt{63}$

68. $\sqrt{\frac{11}{64}}$

**Simplify the expression.**

69. $\frac{\sqrt{36}}{\sqrt{3}}$

70. $\sqrt{4} \bullet \sqrt{12}$

71. **Simplify.**

$\sqrt{\frac{81}{225}}$

Evaluate the expression.

72. $\frac{3x}{x-1}$ when $x = 3$

Evaluate the expression.

73. $\frac{2m+9}{m}$ when $m = 2$

74. Evaluate the expression.

$4 \bullet 5^2 - 18$

Evaluate the expression.

75. $3(5m-4)$ when $m = -2$

Find the sum or difference.

76. $\left(5x^2 - 11x + 9\right) + \left(7x - 13 - 3x^2\right)$

Find the sum or difference.

77. $\left(17y^2 - 6y + 5\right) - \left(11y^2 - 2y + 8\right)$

Find the product.

78. $(3a - 5b)^2$

Evaluate the expression.

79. $9x^2 - 4$ when $x = 3$

Solve the equation.

80. $2(x+3) = \frac{3}{4}(8x - 12)$

81. Solve the equation.

$-28 = 10w - 3w$

82. Solve the equation.

$17 = -5x - 6x + 14$

Evaluate the expression.

83. $4\left[32 - (17 - 12)^2\right]$

Evaluate the expression.

84. $7 + 6^2 \div 3$

Check whether the given number is a solution of the equation or inequality.

85. $5c - 13 = 12; 2$

Solve the equation.

86. $17 = 4x - 7$

Evaluate the expression.

87. $\dfrac{27 - 13}{4^2 - 9}$

88. Solve the equation, if possible.
$24 = 13z - 4z + 6$

89. Solve the equation, if possible.
$6 - 11x = 7x - 12$

90. Solve the equation.

$9 - \frac{n}{3} = 28$

91. Solve the equation.

$16w - 10w + 13 = -5$

92. Solve the equation.

$\frac{2}{3}t = 18$

93. Solve the equation.

$-112 = 7n$

94. Solve the equation.

$4h - 13 = 7h + 2$

95. Solve the equation, if possible.

$12(x + 3) = 24 + 12x$

96. Solve the equation.

$\frac{2}{5}(25z - 30) = \frac{3}{4}(12z + 16)$

97. Solve the proportion.

$\frac{x}{8} = \frac{12}{32}$

98. Solve the proportion.

$\frac{12}{3w} = \frac{36}{63}$

99. Solve the equation.

$\frac{1}{2} = 4(5x - 3)$

100. Solve the equation.

$\frac{k}{7} - 9 = 33$

101. Solve the equation, if possible.

$7(h + 3) + 4 = -3$

102. Solve the equation.

$\frac{d}{5} + 1 = 7$

103. Solve the equation, if possible.

$2y + 5 = 3(4y - 5)$

Solve the proportion. Check your solution.

104. $\frac{2m+7}{6} = \frac{5m-2}{5}$

Solve the proportion. Check your solution.

105. $\frac{13}{w} = \frac{26}{w+5}$

Solve the proportion.

106. $\frac{t}{65} = \frac{5}{13}$

Solve the proportion.

107. $\frac{m+18}{m} = \frac{5}{2}$

Solve the proportion.

108. $\frac{j+4}{6} = \frac{18}{12}$

Solve the proportion.

109. $\frac{21}{15} = \frac{3k-2}{5}$

110. Write the equation so that $y$ is a function of $x$.

$-12x + 3y = 15$

111. Write the equation so that $y$ is a function of $x$.

$5x = -10y + 30$

112. Write the equation so that $y$ is a function of $x$.

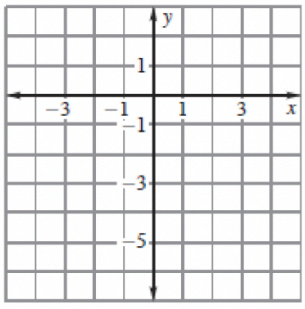
$8x - 4y = 20$

113. Identify the slope and y-intercept of the line with the given equation.

$y = -\frac{4}{5}x + 9$

114. Graph the equation.

$y = \frac{1}{4}x - 5$



115. Find the slope of the line that passes through the points.

$(-7,3)$ and $(3,8)$

116. Write an equation in slope-intercept form of the line with the given characteristics.

slope 3; *y*-intercept 5

117. Write an equation in slope-intercept form of the line with the given characteristics.

$m = 4$; passes through $(-3,-2)$